



## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Ashkenazi et al. # 4 ) Group Art Unit Unknown  
 Appl. No. : 09/978,188 )  
 Filed : October 15, 2001 )  
 For : SECRETED AND )  
 TRANSMEMBRANE )  
 POLYPEPTIDES AND NUCLEIC )  
 ACIDS ENCODING THE SAME )  
 Examiner : Unknown )

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January 28, 2002

(Date)

*Ginger R. Dreger*  
 Ginger R. Dreger, Reg. No. 33,055

SEQUENCE SUBMISSION STATEMENT

Commissioner for Patents  
 Washington, D.C. 20231

Dear Sir:

This is in response to the Notice to Comply with Requirements for Patent Applications Containing Nucleotide Sequence and/or Amino Acid Sequence Disclosures, mailed December 18, 2001. I hereby state that the amendments, made in accordance with 37 C.F.R. § 1.825(a) and included in the Substitute Sequence Listing submitted herewith, are supported in the application, and that the Substitute Sequence Listing does not include new matter.

I further state that the information recorded in the currently submitted substitute copy of the computer-readable form of the Sequence Listing is identical to the paper form of the Sequence Listing submitted herewith as required in 37 C.F.R. § 1.825(b).

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON &amp; BEAR, LLP

Dated: January 28, 2002

By:

*Ginger R. Dreger*Ginger R. Dreger  
Registration No. 33,055

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#4

## Sequence Listing

<110> Ashkenazi, Avi  
Baker Kevin P.  
Botstein, David  
Desnoyers, Luc  
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Ferrara, Napoleon  
Filvaroff, Ellen  
Fong, Sherman  
Gao, Wei-Qiang  
Gerber, Hanspeter  
Gerritsen, Mary E.  
Goddard, Audrey  
Godowski, Paul J.  
Grimaldi, J. Christopher  
Gurney, Austin L.  
Hillan, Kenneth J  
Kljavin, Ivar J.  
Kuo, Sophia S.  
Napier, Mary A.  
Pan, James;  
Paoni, Nicholas F.  
Roy, Margaret Ann  
Shelton, David L.  
Stewart, Timothy A.  
Tumas, Daniel  
Williams, P. Mickey  
Wood, William I.

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cagggtttttt cctttaaaaa aattatagac acggttcact aaattgattt 2800  
 agtcagaatt cctagactga aagaacctaa acaaaaaaat attttaaaga 2850  
 tataaatata tgctgtatat gttatgtaat ttattttagg ctataatata 2900  
 tttcctattt tcgcattttc aataaaatgt ctctaataca aaaaa 2945

<210> 7  
 <211> 492  
 <212> PRT  
 <213> Homo sapiens

<400> 7  
 Met Val Lys Phe Pro Ala Leu Thr His Tyr Trp Pro Leu Ile Arg 15  
 1 5 10  
 Phe Leu Val Pro Leu Gly Ile Thr Asn Ile Ala Ile Asp Phe Gly 30  
 20 25 30  
 Glu Gln Ala Leu Asn Arg Gly Ile Ala Ala Val Lys Glu Asp Ala 45  
 35 40 45  
 Val Glu Met Leu Ala Ser Tyr Gly Leu Ala Tyr Ser Leu Met Lys 60  
 50 55 60  
 Phe Phe Thr Gly Pro Met Ser Asp Phe Lys Asn Val Gly Leu Val 75  
 65 70 75  
 Phe Val Asn Ser Lys Arg Asp Arg Thr Lys Ala Val Leu Cys Met 90  
 80 85 90  
 Val Val Ala Gly Ala Ile Ala Ala Val Phe His Thr Leu Ile Ala 105  
 95 100 105  
 Tyr Ser Asp Leu Gly Tyr Tyr Ile Ile Asn Lys Leu His His Val 120  
 110 115 120  
 Asp Glu Ser Val Gly Ser Lys Thr Arg Arg Ala Phe Leu Tyr Leu 135  
 125 130 135  
 Ala Ala Phe Pro Phe Met Asp Ala Met Ala Trp Thr His Ala Gly 150  
 140 145 150  
 Ile Leu Leu Lys His Lys Tyr Ser Phe Leu Val Gly Cys Ala Ser 165  
 155 160 165  
 Ile Ser Asp Val Ile Ala Gln Val Val Phe Val Ala Ile Leu Leu 180  
 170 175 180  
 His Ser His Leu Glu Cys Arg Glu Pro Leu Leu Ile Pro Ile Leu 195  
 185 190 195  
 Ser Leu Tyr Met Gly Ala Leu Val Arg Cys Thr Thr Leu Cys Leu 210  
 200 205 210

|   |     |     |     |
|---|-----|-----|-----|
| Gly Tyr Tyr Lys Asn Ile His Asp Ile Ile Pro Asp Arg Ser Gly | 215 | 220 | 225 |
| Pro Glu Leu Gly Gly Asp Ala Thr Ile Arg Lys Met Leu Ser Phe | 230 | 235 | 240 |
| Trp Trp Pro Leu Ala Leu Ile Leu Ala Thr Gln Arg Ile Ser Arg | 245 | 250 | 255 |
| Pro Ile Val Asn Leu Phe Val Ser Arg Asp Leu Gly Gly Ser Ser | 260 | 265 | 270 |
| Ala Ala Thr Glu Ala Val Ala Ile Leu Thr Ala Thr Tyr Pro Val | 275 | 280 | 285 |
| Gly His Met Pro Tyr Gly Trp Leu Thr Glu Ile Arg Ala Val Tyr | 290 | 295 | 300 |
| Pro Ala Phe Asp Lys Asn Asn Pro Ser Asn Lys Leu Val Ser Thr | 305 | 310 | 315 |
| Ser Asn Thr Val Thr Ala Ala His Ile Lys Lys Phe Thr Phe Val | 320 | 325 | 330 |
| Cys Met Ala Leu Ser Leu Thr Leu Cys Phe Val Met Phe Trp Thr | 335 | 340 | 345 |
| Pro Asn Val Ser Glu Lys Ile Leu Ile Asp Ile Ile Gly Val Asp | 350 | 355 | 360 |
| Phe Ala Phe Ala Glu Leu Cys Val Val Pro Leu Arg Ile Phe Ser | 365 | 370 | 375 |
| Phe Phe Pro Val Pro Val Thr Val Arg Ala His Leu Thr Gly Trp | 380 | 385 | 390 |
| Leu Met Thr Leu Lys Lys Thr Phe Val Leu Ala Pro Ser Ser Val | 395 | 400 | 405 |
| Leu Arg Ile Ile Val Leu Ile Ala Ser Leu Val Val Leu Pro Tyr | 410 | 415 | 420 |
| Leu Gly Val His Gly Ala Thr Leu Gly Val Gly Ser Leu Leu Ala | 425 | 430 | 435 |
| Gly Phe Val Gly Glu Ser Thr Met Val Ala Ile Ala Ala Cys Tyr | 440 | 445 | 450 |
| Val Tyr Arg Lys Gln Lys Lys Lys Met Glu Asn Glu Ser Ala Thr | 455 | 460 | 465 |
| Glu Gly Glu Asp Ser Ala Met Thr Asp Met Pro Pro Thr Glu Glu | 470 | 475 | 480 |
| Val Thr Asp Ile Val Glu Met Arg Glu Glu Asn Glu             | 485 | 490 |     |

<210> 8  
<211> 535  
<212> DNA  
<213> Homo sapiens

<220>  
<221> unsure  
<222> 33, 66, 96, 387  
<223> unknown base

<400> 8  
cctgacagaa gtgccccgga gctgggggag atncaacatt aagaagatgc 50  
tgagcttctg gtgccttttg gctctaattc tggccacaca gagaancagt 100  
cggcctattg tcaacctctt tgtttcccg gaccttggtg gcagttctgc 150  
agccacagag gcagtggcga ttttgacagc cacataccct gtgggtcaca 200  
tgccatacgg ctggttgacg gaaatccgtg ctgtgtatcc tgctttcgac 250  
aagaataacc ccagcaacaa actggtgagc acgagcaaca cagtcacggc 300  
ggccacatc aagaagttca ccttcgtctg catggctctg tcactcacgc 350  
tctgtttcgt gatgttttgg acacccaacg tgtctgngaa aatcttgata 400  
gacatcatcg gagtggactt tgcctttgca gaactctgtg ttgttccttt 450  
gcggatcttc tccttcttcc cagttccagt cacagtggag gcgcatctca 500  
ccgggtggct gatgacactg aagaaaacct tcgtc 535

<210> 9  
<211> 434  
<212> DNA  
<213> Homo sapiens

<220>  
<221> unsure  
<222> 32, 54, 80, 111, 117, 122, 139, 193, 205, 221, 226, 228, 273,  
293, 296, 305, 336, 358, 361  
<223> unknown base

<400> 9  
tgacggaatc ccgggctggg tatcctgggt tngacaagat aaacccccag 50  
caanaaattg gggagcaggg caaaacagtn acgggcagcc cacatcaaga 100  
agttcacctt ngtttgnatg gntctgtcaa ctcacgctnt gtttcgtgat 150  
gttttgagaca ccaaagtgt ttgagaaaat tttgatagac atnatcggag 200  
tggantttgc ctttgcagaa ntttgnngtg ttcctttgcg gattttctcc 250  
tttttcccag ttccagtcac agngagggcg catctcaccg ggnggntgat 300

gacantgaag aaaacctttg tccttgcccc cagctntttg gtgcggatca 350  
ttgtcctnat ngccagcctt gtggtcctac cctacctggg ggtgcacggt 400  
gcgaccctgg gcgtgggttc cctcctggcg ggca 434

<210> 10  
<211> 154  
<212> DNA  
<213> Homo sapiens

<220>  
<221> unsure  
<222> 33, 49, 68, 83, 90, 98, 119  
<223> unknown base

<400> 10  
tattccagtc tccgggtcacg gggagggcgc atntcaccgg gtggctgang 50  
acactgaaga aaaccttngt ccttgcccc agntttgtgn tgcggatnat 100  
cgtcctcatc gccagcctng tggtcctacc ctacctgggg gtgcacggtg 150  
agac 154

<210> 11  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 11  
ctgatccggt tcttggtgcc cctg 24

<210> 12  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 12  
gctctgtcac tcacgctc 18

<210> 13  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 13  
tcatctcttc cctctccc 18



<210> 14  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 14  
ccttccgccca cggagttc 18

<210> 15  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 15  
ggcaaagtcc actccgatga tgctc 24

<210> 16  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 16  
gcctgctgtg gtcacaggtc tccg 24

<210> 17  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 17  
tcggggagca ggccttgaac cggggcattg ctgctgtcaa ggagg 45

<210> 18  
<211> 1901  
<212> DNA  
<213> Homo sapiens

<400> 18  
gccccgcgcc cggcgccggg cggcgaagc cgggagccac cgccatgggg 50  
gcctgcctgg gagcctgctc cctgctcagc tgcgcgtcct gcctctgcgg 100  
ctctgcccc tgcctcctgt gcagctgctg ccccgccagc cgcaactcca 150

ccgtgagccg cctcatcttc acgttcttcc tcttcctggg ggtgctggtg 200  
tccatcatta tgctgagccc gggcgtggag agtcagctct acaagctgcc 250  
ctgggtgtgt gaggaggggg ccgggatccc caccgtcctg cagggccaca 300  
tcgactgtgg ctccctgctt ggctaccgag ctgtctaccg catgtgcttc 350  
gccacggcgg ccttcttctt cttctttttc accctgctca tgctctgcgt 400  
gagcagcagc cgggaccccc gggctgccat ccagaatggg ttttggttct 450  
ttaagttcct gatcctggtg ggctcaccg tgggtgcctt ctacatccct 500  
gacggctcct tcaccaacat ctggttctac ttcggcgctg tgggctcctt 550  
cctcttcac ctcacccagc tgggtgctgt catcgacttt gcgcactcct 600  
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tacgcaggcc tcttcttctt cactctcctc ttctacttgc tgctgatcgc 700  
ggccgtggcg ctgatgttca tgtactacac tgagcccagc ggctgccacg 750  
agggcaaggt cttcatcagc ctcaacctca cttctgtgt ctgcgtgtcc 800  
atcgctgctg tctgcccac ggtccaggac gccagccca actcgggtct 850  
gctgcaggcc tcggtcatca ccctctacac catgtttgtc acctggtcag 900  
ccctatccag tatccctgaa cagaaatgca accccattt gccaacccag 950  
ctgggcaacg agacagttgt ggcaggcccc gagggctatg agaccagtg 1000  
gtgggatgcc ccgagcattg tgggcctcat catcttctc ctgtgcaccc 1050  
tcttcatcag tctgcgtcc tcagaccacc ggcagggtgaa cagcctgatg 1100  
cagaccgagg agtgcccacc tatgctagac gccacacagc agcagcagca 1150  
gcagggtggca gcctgtgagg gccgggcctt tgacaacgag caggacggcg 1200  
tcacctacag ctactccttc ttccatttct gcctggtgct ggctcactg 1250  
cacgtcatga tgacgtcac caactggtac aagcccgggtg agaccggaa 1300  
gatgatcagc acgtggaccg ccgtgtgggt gaagatctgt gccagctggg 1350  
cagggtgct cctctacctg tggaccctgg tagcccaact cctcctgcgc 1400  
aaccgcgact tcagctgagg cagcctcaca gcctgccatc tgggtgcctcc 1450  
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caccaatcag ccagggtgag cccccaccc tgccccagct ccaggacctg 1550  
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caggctcctg cagagcccca tcccccgcc acaccacac ggtggagctg 1650  
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 ggggaactcc caccacagtg gggcatccgg cactgaagcc ctggtgttcc 1800  
 tggtcacgtc cccagggga cctgcccc ttctggact tcgtgcctta 1850  
 ctgagtctct aagacttttt ctaataaaca agccagtgcg tgtaaaaaaa 1900  
 a 1901

<210> 19  
 <211> 457  
 <212> PRT  
 <213> Homo sapiens

<400> 19  
 Met Gly Ala Cys Leu Gly Ala Cys Ser Leu Leu Ser Cys Ala Ser  
 1 5 10 15  
 Cys Leu Cys Gly Ser Ala Pro Cys Ile Leu Cys Ser Cys Cys Pro  
 20 25 30  
 Ala Ser Arg Asn Ser Thr Val Ser Arg Leu Ile Phe Thr Phe Phe  
 35 40 45  
 Leu Phe Leu Gly Val Leu Val Ser Ile Ile Met Leu Ser Pro Gly  
 50 55 60  
 Val Glu Ser Gln Leu Tyr Lys Leu Pro Trp Val Cys Glu Glu Gly  
 65 70 75  
 Ala Gly Ile Pro Thr Val Leu Gln Gly His Ile Asp Cys Gly Ser  
 80 85 90  
 Leu Leu Gly Tyr Arg Ala Val Tyr Arg Met Cys Phe Ala Thr Ala  
 95 100 105  
 Ala Phe Phe Phe Phe Phe Phe Thr Leu Leu Met Leu Cys Val Ser  
 110 115 120  
 Ser Ser Arg Asp Pro Arg Ala Ala Ile Gln Asn Gly Phe Trp Phe  
 125 130 135  
 Phe Lys Phe Leu Ile Leu Val Gly Leu Thr Val Gly Ala Phe Tyr  
 140 145 150  
 Ile Pro Asp Gly Ser Phe Thr Asn Ile Trp Phe Tyr Phe Gly Val  
 155 160 165  
 Val Gly Ser Phe Leu Phe Ile Leu Ile Gln Leu Val Leu Leu Ile  
 170 175 180

|     |     |     |     |            |     |     |     |     |            |     |     |     |     |            |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| Asp | Phe | Ala | His | Ser<br>185 | Trp | Asn | Gln | Arg | Trp<br>190 | Leu | Gly | Lys | Ala | Glu<br>195 |
| Glu | Cys | Asp | Ser | Arg<br>200 | Ala | Trp | Tyr | Ala | Gly<br>205 | Leu | Phe | Phe | Phe | Thr<br>210 |
| Leu | Leu | Phe | Tyr | Leu<br>215 | Leu | Ser | Ile | Ala | Ala<br>220 | Val | Ala | Leu | Met | Phe<br>225 |
| Met | Tyr | Tyr | Thr | Glu<br>230 | Pro | Ser | Gly | Cys | His<br>235 | Glu | Gly | Lys | Val | Phe<br>240 |
| Ile | Ser | Leu | Asn | Leu<br>245 | Thr | Phe | Cys | Val | Cys<br>250 | Val | Ser | Ile | Ala | Ala<br>255 |
| Val | Leu | Pro | Lys | Val<br>260 | Gln | Asp | Ala | Gln | Pro<br>265 | Asn | Ser | Gly | Leu | Leu<br>270 |
| Gln | Ala | Ser | Val | Ile<br>275 | Thr | Leu | Tyr | Thr | Met<br>280 | Phe | Val | Thr | Trp | Ser<br>285 |
| Ala | Leu | Ser | Ser | Ile<br>290 | Pro | Glu | Gln | Lys | Cys<br>295 | Asn | Pro | His | Leu | Pro<br>300 |
| Thr | Gln | Leu | Gly | Asn<br>305 | Glu | Thr | Val | Val | Ala<br>310 | Gly | Pro | Glu | Gly | Tyr<br>315 |
| Glu | Thr | Gln | Trp | Trp<br>320 | Asp | Ala | Pro | Ser | Ile<br>325 | Val | Gly | Leu | Ile | Ile<br>330 |
| Phe | Leu | Leu | Cys | Thr<br>335 | Leu | Phe | Ile | Ser | Leu<br>340 | Arg | Ser | Ser | Asp | His<br>345 |
| Arg | Gln | Val | Asn | Ser<br>350 | Leu | Met | Gln | Thr | Glu<br>355 | Glu | Cys | Pro | Pro | Met<br>360 |
| Leu | Asp | Ala | Thr | Gln<br>365 | Gln | Gln | Gln | Gln | Gln<br>370 | Val | Ala | Ala | Cys | Glu<br>375 |
| Gly | Arg | Ala | Phe | Asp<br>380 | Asn | Glu | Gln | Asp | Gly<br>385 | Val | Thr | Tyr | Ser | Tyr<br>390 |
| Ser | Phe | Phe | His | Phe<br>395 | Cys | Leu | Val | Leu | Ala<br>400 | Ser | Leu | His | Val | Met<br>405 |
| Met | Thr | Leu | Thr | Asn<br>410 | Trp | Tyr | Lys | Pro | Gly<br>415 | Glu | Thr | Arg | Lys | Met<br>420 |
| Ile | Ser | Thr | Trp | Thr<br>425 | Ala | Val | Trp | Val | Lys<br>430 | Ile | Cys | Ala | Ser | Trp<br>435 |
| Ala | Gly | Leu | Leu | Leu<br>440 | Tyr | Leu | Trp | Thr | Leu<br>445 | Val | Ala | Pro | Leu | Leu<br>450 |
| Leu | Arg | Asn | Arg | Asp<br>455 | Phe | Ser |     |     |            |     |     |     |     |            |

<210> 20  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 20  
gccgcctcat cttcacgttc ttcc 24

<210> 21  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 21  
tcatccagct ggtgctgctc 20

<210> 22  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 22  
cttcttcac ttctgcctgg 20

<210> 23  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 23  
cctgggcaaa aatgcaac 18

<210> 24  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 24  
caggaatgta gaaggcacc acgg 24

<210> 25  
<211> 24

<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 25  
tggcacagat cttcacccac acgg 24

<210> 26  
<211> 50  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 26  
tgtccatcat tatgctgagc ccgggcgtgg agagtcagct ctacaagctg 50

<210> 27  
<211> 1351  
<212> DNA  
<213> Homo sapiens

<400> 27  
gagcgaggcc ggggactgaa ggtgtgggtg tcgagccctc tggcagaggg 50  
ttaacctggg tcaaattgcac ggattctcac ctcgtacagt tacgctctcc 100  
cgcggcacgt ccgcgaggac ttgaagtcct gagcgctcaa gtttgtccgt 150  
aggctcgagag aaggccatgg aggtgccgcc accggcaccg cggagctttc 200  
tctgtagagc attgtgccta tttccccgag tctttgctgc cgaagctgtg 250  
actgccgatt cggaagtcct tgaggagcgt cagaagcggc ttccctacgt 300  
cccagagccc tattaccgg aatctggatg ggaccgcctc cgggagctgt 350  
ttggcaaaga tgaacagcag agaatttcaa aggaccttgc taatatctgt 400  
aagacggcag ctacagcagg catcattggc tgggtgtatg ggggaatacc 450  
agctttttatt catgctaaac aacaatacat tgagcagagc caggcagaaa 500  
tttatcataa ccggtttgat gctgtgcaat ctgcacatcg tgctgccaca 550  
cgaggcttca ttcgttatgg ctggcgctgg ggttgagaa ctgcagtgtt 600  
tgtgactata ttcaacacag tgaacactag tctgaatgta taccgaaata 650  
aagatgcctt aagccatttt gtaattgcag gagctgtcac ggggaagtctt 700  
tttaggataa acgtaggcct gcgtggcctg gtggctggtg gcataattgg 750  
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acgctggtga gactgttcag gaaagaaaac agaaggatcg aaaggcactc 850  
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 cctccctgag aaaattgaaa gtagtttacg ggaagatgaa cctgagaatg 950  
 atgctaagaa aattgaagca ctgctaaacc ttcctagaaa cccttcagta 1000  
 atagataaac aagacaagga ctgaaagtgc tctgaacttg aaactcactg 1050  
 gagagctgaa gggagctgcc atgtccgatg aatgccaaca gacaggccac 1100  
 tcttttggtca gcctgctgac aaatttaagt gctggtacct gtggtggcag 1150  
 tggcttgctc ttgtcttttt cttttctttt taactaagaa tggggctggt 1200  
 gtactctcac tttacttata cttaaattta aatacatact tatgtttgta 1250  
 ttaatctatc aatatatgca tacatggata tatccacca cctagatttt 1300  
 aagcagtaaa taaaacattt cgcaaaagat taaagttgaa ttttacagtt 1350  
 t 1351

<210> 28  
 <211> 285  
 <212> PRT  
 <213> Homo sapiens

<400> 28  
 Met Glu Val Pro Pro Ala Pro Arg Ser Phe Leu Cys Arg Ala  
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 Asp Ser Glu Val Leu Glu Glu Arg Gln Lys Arg Leu Pro Tyr Val  
 35 40 45  
 Pro Glu Pro Tyr Tyr Pro Glu Ser Gly Trp Asp Arg Leu Arg Glu  
 50 55 60  
 Leu Phe Gly Lys Asp Glu Gln Gln Arg Ile Ser Lys Asp Leu Ala  
 65 70 75  
 Asn Ile Cys Lys Thr Ala Ala Thr Ala Gly Ile Ile Gly Trp Val  
 80 85 90  
 Tyr Gly Gly Ile Pro Ala Phe Ile His Ala Lys Gln Gln Tyr Ile  
 95 100 105  
 Glu Gln Ser Gln Ala Glu Ile Tyr His Asn Arg Phe Asp Ala Val  
 110 115 120  
 Gln Ser Ala His Arg Ala Ala Thr Arg Gly Phe Ile Arg Tyr Gly  
 125 130 135

Trp Arg Trp Gly Trp Arg Thr Ala Val Phe Val Thr Ile Phe Asn  
 140 145 150  
 Thr Val Asn Thr Ser Leu Asn Val Tyr Arg Asn Lys Asp Ala Leu  
 155 160 165  
 Ser His Phe Val Ile Ala Gly Ala Val Thr Gly Ser Leu Phe Arg  
 170 175 180  
 Ile Asn Val Gly Leu Arg Gly Leu Val Ala Gly Gly Ile Ile Gly  
 185 190 195  
 Ala Leu Leu Gly Thr Pro Val Gly Gly Leu Leu Met Ala Phe Gln  
 200 205 210  
 Lys Tyr Ala Gly Glu Thr Val Gln Glu Arg Lys Gln Lys Asp Arg  
 215 220 225  
 Lys Ala Leu His Glu Leu Lys Leu Glu Glu Trp Lys Gly Arg Leu  
 230 235 240  
 Gln Val Thr Glu His Leu Pro Glu Lys Ile Glu Ser Ser Leu Arg  
 245 250 255  
 Glu Asp Glu Pro Glu Asn Asp Ala Lys Lys Ile Glu Ala Leu Leu  
 260 265 270  
 Asn Leu Pro Arg Asn Pro Ser Val Ile Asp Lys Gln Asp Lys Asp  
 275 280 285

<210> 29  
 <211> 324  
 <212> DNA  
 <213> Homo sapiens

<400> 29  
 cggaagtccc ttgaggagcg tcagaagcgg cttccctacg tcccagagcc 50  
 ctattaccgc gaatctggat gggaccgctc cgggagctgt ttggcaaaga 100  
 tgaacagcag agaatttcaa aggaccttgc taatatctgt aagacggcag 150  
 ctacagcagg catcattggc tgggtgtatg ggggaatacc agcttttatt 200  
 catgctaaac aacaatacat tgagcagagc caggcagaaa tttatcataa 250  
 ccggtttgat gctgtgcaat ctgcacatcg tgctgccaca cgaggcttca 300  
 ttcgttcatg gctggcgccg aacc 324

<210> 30  
 <211> 377  
 <212> DNA  
 <213> Homo sapiens

<220>



<221> unsure  
<222> 262, 330, 371  
<223> unknown base

<400> 30  
tcaagtttgt ccgtaggtcg agagaaggcc atggaggtgc cgccaccggc 50  
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gctgccgaag ctgtgactgc cgattcggaa gtccttgagg agcgtcagaa 150  
gcggcttccc tacgtcccag agccctatta cccggaattt ggatgggacc 200  
gcctccggga gctgtttggc aaagatgaac agcagagaat ttcaaaggac 250  
cttgctgata tntgtaagac ggcagctaca gcaggcatca ttggctgggt 300  
gtatggggga ataccagctt ttattcatgn taaacaacaa tacattgagc 350  
agagccaggc agaaatttat nataacc 377

<210> 31  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 31  
tcgtacagtt acgctctccc 20

<210> 32  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 32  
cttgaggagc gtcagaagcg 20

<210> 33  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 33  
ataacgaatg aagcctcgtg 20

<210> 34  
<211> 40  
<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 34

gctaatatct gtaagacggc agctacagca ggcatcattg 40

<210> 35

<211> 1819

<212> DNA

<213> Homo sapiens

<400> 35

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gacaaagcag ctgtcaggga acctccgccg gagtcgaatt tacgtgcagc 150  
tgccggcaac cacaggttcc aagatggttt gcgggggctt cgcgtgttcc 200  
aagaactgcc tgtgcgcct caacctgctt tacaccttg ttagtctgct 250  
gctaattgga attgctgcgt ggggcattgg cttcgggctg atttcagtc 300  
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 tataaaaatg ataatttact tgtagtcttt tatgattaca ccaatgtatt 1350  
 ctagaaatag ttatgtctta ggaaattgtg gtttaatttt tgacttttac 1400  
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 atctcccata atttgaaatt gaaatcgtat tgtgtggctc tgtatattct 1750  
 gttaaaaaat taaaggacag aaacctttct ttgtgtatgc atgtttgaat 1800  
 taaaagaaag taatggaag 1819

<210> 36  
 <211> 204  
 <212> PRT  
 <213> Homo sapiens

<400> 36  
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 Leu Asn Leu Leu Tyr Thr Leu Val Ser Leu Leu Leu Ile Gly Ile  
 20 25 30  
 Ala Ala Trp Gly Ile Gly Phe Gly Leu Ile Ser Ser Leu Arg Val  
 35 40 45  
 Val Gly Val Val Ile Ala Val Gly Ile Phe Leu Phe Leu Ile Ala  
 50 55 60  
 Leu Val Gly Leu Ile Gly Ala Val Lys His His Gln Val Leu Leu  
 65 70 75  
 Phe Phe Tyr Met Ile Ile Leu Leu Leu Val Phe Ile Val Gln Phe  
 80 85 90  
 Ser Val Ser Cys Ala Cys Leu Ala Leu Asn Gln Glu Gln Gln Gly  
 95 100 105

Gln Leu Leu Glu Val Gly Trp Asn Asn Thr Ala Ser Ala Arg Asn  
 110 115 120  
 Asp Ile Gln Arg Asn Leu Asn Cys Cys Gly Phe Arg Ser Val Asn  
 125 130 135  
 Pro Asn Asp Thr Cys Leu Ala Ser Cys Val Lys Ser Asp His Ser  
 140 145 150  
 Cys Ser Pro Cys Ala Pro Ile Ile Gly Glu Tyr Ala Gly Glu Val  
 155 160 165  
 Leu Arg Phe Val Gly Gly Ile Gly Leu Phe Phe Ser Phe Thr Glu  
 170 175 180  
 Ile Leu Gly Val Trp Leu Thr Tyr Arg Tyr Arg Asn Gln Lys Asp  
 185 190 195  
 Pro Arg Ala Asn Pro Ser Ala Phe Leu  
 200

<210> 37  
 <211> 390  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> 20, 35, 61, 83, 106, 130, 133, 187, 232, 260, 336  
 <223> unknown base

<400> 37  
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 tagccntgaa ccaggagcaa cagggtcagn ttntggaggt tgggttgaac 150  
 aatacggcaa gtgctcgaaa tgacatccag agaaatntaa actgctgtgg 200  
 gttccgaagt gttaacccaa atgacacctg tntggctagc tgtgttaaaa 250  
 gtgaccactn gtgctcgcca tgtgctccaa tcataggaga atatgctgga 300  
 gaggttttga gatttggttg tggcattggc ctgttnttca gttttacaga 350  
 gatcctgggt gtttggctga cctacagata caggaaccag 390

<210> 38  
 <211> 566  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> 27

<223> unknown base

<400> 38

aatcccaaat tccccaattt ttttggnott tttagggaaa gatgtgttgt 50  
ggtaaaaagt gttagtataa aaatgataat ttacttgtag tcttttatga 100  
ttacaccaat gtattctaga atagtattgt cttaggaaat tgtgggttaa 150  
tttttgactt ttacaggtaa gtgcaaagga gaagtgggtt catgaaatgt 200  
tctaattgtat aataacattt accttcagcc tcccatcaga atggaacgag 250  
ttttgagtaa tccaggaagt atatctatat gatcttgata ttgttttata 300  
taatttgaag tctaaaagac tgcattttta aacaagttag tattaatgcg 350  
ttggcccacg tagcaaaaag atatttgatt atcttaaaaa ttgttaaata 400  
ccgttttcat gaaagtctc agtattgtaa cagcaacttg tcaaacctaa 450  
gcatatttga atatgatctc ccataatttg aaattgaaat cgtatttgtgt 500  
ggaggaaatg gcaatcttat gtgtgctgaa ggacacagta agagcaccaa 550  
gttgtgcccc acttgc 566

<210> 39

<211> 264

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 84-85, 206

<223> unknown base

<400> 39

atgattattc tgttacttgt atttattggt cagttttatg gtatcttgcg 50  
cttgtttagc ccctgaaacc aggagcaaca gggnnacgct tcctggaggt 100  
tggttggaac caatcacggc caagtgactc cgcaaatgac atcccagaga 150  
aatcctaaac tgctgtgggt tccgaagtgt taacccaaat gacacctgtc 200  
tggctnctg tggtaaaagt gaccactcgt gctcgccatg tgctccaatc 250  
ataggagaat atgc 264

<210> 40

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 40  
acccacgtct gcgttgctgc c 21

<210> 41  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 41  
gagaatatgc tggagagg 18

<210> 42  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 42  
aggaatgcac taggattcgc gcgg 24

<210> 43  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 43  
ggcccccagg gcaaggacaa agcagctgtc agggaaacctc cgccg 45

<210> 44  
<211> 2061  
<212> DNA  
<213> Homo sapiens

<400> 44  
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gacgctgcag tgtgaggagac ctgtctgcac tgaggagagc agctgccaca 150  
cggaggatga cttgactgat gcaagggaag ctggcttcca ggtcaaggcc 200  
tacactttca gtgaaccctt ccacctgatt gtgtcctatg actggctgat 250  
cctccaaggt ccagccaagc cagtttttga aggggacctg ctggttctgc 300  
gctgccaggc ctggcaagac tggccactga ctcaggtgac cttctaccga 350

gatggctcag ctctgggtcc ccccgggcct aacaggggaat tctccatcac 400  
cgtggtacaa aaggcagaca gcgggcacta ccactgcagt ggcatcttcc 450  
agagccctgg tcctgggatc ccagaaacag catctgttgt ggctatcaca 500  
gtccaagaac tgtttccagc gccaatcttc agagctgtac cctcagctga 550  
acccaagca ggaagcccca tgacctgag ttgtcagaca aagttgcccc 600  
tgcagaggtc agctgccgc ctcctcttct cttctacaa ggatggaagg 650  
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agaagatcac tccgggtcat actggtgtga ggcagccact gaggacaacc 750  
aagtttgaa acagagcccc cagctagaga tcagagtga gggtgcttcc 800  
agctctgctg cacctcccac attgaatcca gtcctcaga aatcagctgc 850  
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 agctaactca cccttcacc atatgaggac gtggcaagaa gatgacatgt 1950  
 atgagaacca aaaaacagct gtcgcaaacc accgactctg tcgttgccct 2000  
 gatcttgaac ttccagcctc cagaactatg agaaataaaa ttctggttgt 2050  
 ttgtagccta a 2061

<210> 45  
 <211> 359  
 <212> PRT  
 <213> Homo sapiens

<400> 45  
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 Leu Gly Val Leu Trp Val Ala Gln Met Leu Leu Ala Ala Ser Phe 30  
 20 25  
 Glu Thr Leu Gln Cys Glu Gly Pro Val Cys Thr Glu Glu Ser Ser 45  
 35 40  
 Cys His Thr Glu Asp Asp Leu Thr Asp Ala Arg Glu Ala Gly Phe 60  
 50 55  
 Gln Val Lys Ala Tyr Thr Phe Ser Glu Pro Phe His Leu Ile Val 75  
 65 70  
 Ser Tyr Asp Trp Leu Ile Leu Gln Gly Pro Ala Lys Pro Val Phe 90  
 80 85  
 Glu Gly Asp Leu Leu Val Leu Arg Cys Gln Ala Trp Gln Asp Trp 105  
 95 100  
 Pro Leu Thr Gln Val Thr Phe Tyr Arg Asp Gly Ser Ala Leu Gly 120  
 110 115  
 Pro Pro Gly Pro Asn Arg Glu Phe Ser Ile Thr Val Val Gln Lys 135  
 125 130  
 Ala Asp Ser Gly His Tyr His Cys Ser Gly Ile Phe Gln Ser Pro 150  
 140 145  
 Gly Pro Gly Ile Pro Glu Thr Ala Ser Val Val Ala Ile Thr Val 165  
 155 160  
 Gln Glu Leu Phe Pro Ala Pro Ile Leu Arg Ala Val Pro Ser Ala 180  
 170 175  
 Glu Pro Gln Ala Gly Ser Pro Met Thr Leu Ser Cys Gln Thr Lys 195  
 185 190



Leu Pro Leu Gln Arg Ser Ala Ala Arg Leu Leu Phe Ser Phe Tyr  
 200 205 210  
 Lys Asp Gly Arg Ile Val Gln Ser Arg Gly Leu Ser Ser Glu Phe  
 215 220 225  
 Gln Ile Pro Thr Ala Ser Glu Asp His Ser Gly Ser Tyr Trp Cys  
 230 235 240  
 Glu Ala Ala Thr Glu Asp Asn Gln Val Trp Lys Gln Ser Pro Gln  
 245 250 255  
 Leu Glu Ile Arg Val Gln Gly Ala Ser Ser Ser Ala Ala Pro Pro  
 260 265 270  
 Thr Leu Asn Pro Ala Pro Gln Lys Ser Ala Ala Pro Gly Thr Ala  
 275 280 285  
 Pro Glu Glu Ala Pro Gly Pro Leu Pro Pro Pro Pro Thr Pro Ser  
 290 295 300  
 Ser Glu Asp Pro Gly Phe Ser Ser Pro Leu Gly Met Pro Asp Pro  
 305 310 315  
 His Leu Tyr His Gln Met Gly Leu Leu Leu Lys His Met Gln Asp  
 320 325 330  
 Val Arg Val Leu Leu Gly His Leu Leu Met Glu Leu Arg Glu Leu  
 335 340 345  
 Ser Gly His Gln Lys Pro Gly Thr Thr Lys Ala Thr Ala Glu  
 350 355

<210> 46

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 46

tgggctgtgt cctcatgg 18

<210> 47

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 47

tttccagcgc caattctc 18

<210> 48

<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 48  
agttcttggga ctgtgatagc cac 23

<210> 49  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 49  
aaacttggtt gtcctcagt gctg 24

<210> 50  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 50  
gtgagggacc tgtctgcact gaggagagca gctgccacac ggagg 45

<210> 51  
<211> 2181  
<212> DNA  
<213> Homo sapiens

<400> 51  
cccacgcgtc cgcccacgcg tccgcccacg ggtccgccca cgcgtccggg 50  
ccaccagaag tttgagcctc tttggtagca ggaggctgga agaaaggaca 100  
gaagtagctc tggctgtgat ggggatctta ctgggcctgc tactcctggg 150  
gcacctaaaca gtggacactt atggccgtcc catcctggaa gtgccagaga 200  
gtgtaacagg accttggaag ggggatgtga atcttcctg cacctatgac 250  
cccctgcaag gctacacca agtcttggtg aagtggctgg tacaacgtgg 300  
ctcagaccct gtcaccatct ttctacgtga ctcttctgga gaccatatcc 350  
agcaggcaaa gtaccagggc cgcctgcatg tgagccacaa ggtccagga 400  
gatgtatccc tccaattgag caccctggag atggatgacc ggagccacta 450  
cacgtgtgaa gtcacctggc agactcctga tggcaaccaa gtcgtgagag 500

ataagattac tgagctccgt gtccagaaac tctctgtctc caagcccaca 550  
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ataagcaaca gactaataac caggaacca tcaaagtagc aaccctaagt 700  
accttactct tcaagcctgc ggtgatagcc gactcaggct cctatttctg 750  
cactgccaaag ggccagggtg gctctgagca gcacagcgac attgtgaagt 800  
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ggactggacc actgacatgg atggctacct tggagagacc agtgctgggc 950  
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caggagtacc agatcatcgc ccagatcaat ggcaactacg cccgcctgct 1600  
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tctaaatacc agaggggaaga tgcccatagc actaggactt ggtcatcatg 1950  
 cctacagaca ctattcaact ttggcatctt gccaccagaa gacccgaggg 2000  
 aggctcagct ctgccagctc agaggaccag ctatatccag gatcatttct 2050  
 ctttcttcag ggccagacag cttttaattg aaattgttat ttcacaggcc 2100  
 agggttcagt tctgctcctc cactataagt ctaatgttct gactctctcc 2150  
 tggtgctcaa taaatatcta atcataacag c 2181

<210> 52  
 <211> 321  
 <212> PRT  
 <213> Homo sapiens

<400> 52  
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 1 5 10  
 Asp Thr Tyr Gly Arg Pro Ile Leu Glu Val Pro Glu Ser Val Thr 30  
 20 25  
 Gly Pro Trp Lys Gly Asp Val Asn Leu Pro Cys Thr Tyr Asp Pro 45  
 35 40  
 Leu Gln Gly Tyr Thr Gln Val Leu Val Lys Trp Leu Val Gln Arg 60  
 50 55  
 Gly Ser Asp Pro Val Thr Ile Phe Leu Arg Asp Ser Ser Gly Asp 75  
 65 70  
 His Ile Gln Gln Ala Lys Tyr Gln Gly Arg Leu His Val Ser His 90  
 80 85  
 Lys Val Pro Gly Asp Val Ser Leu Gln Leu Ser Thr Leu Glu Met 105  
 95 100  
 Asp Asp Arg Ser His Tyr Thr Cys Glu Val Thr Trp Gln Thr Pro 120  
 110 115  
 Asp Gly Asn Gln Val Val Arg Asp Lys Ile Thr Glu Leu Arg Val 135  
 125 130  
 Gln Lys Leu Ser Val Ser Lys Pro Thr Val Thr Thr Gly Ser Gly 150  
 140 145  
 Tyr Gly Phe Thr Val Pro Gln Gly Met Arg Ile Ser Leu Gln Cys 165  
 155 160  
 Gln Ala Arg Gly Ser Pro Pro Ile Ser Tyr Ile Trp Tyr Lys Gln 180  
 170 175  
 Gln Thr Asn Asn Gln Glu Pro Ile Lys Val Ala Thr Leu Ser Thr 195  
 185 190

Leu Leu Phe Lys Pro Ala Val Ile Ala Asp Ser Gly Ser Tyr Phe 210  
 200  
 Cys Thr Ala Lys Gly Gln Val Gly Ser Glu Gln His Ser Asp Ile 225  
 215  
 Val Lys Phe Val Val Lys Asp Ser Ser Lys Leu Leu Lys Thr Lys 240  
 230  
 Thr Glu Ala Pro Thr Thr Met Thr Tyr Pro Leu Lys Ala Thr Ser 255  
 245  
 Thr Val Lys Gln Ser Trp Asp Trp Thr Thr Asp Met Asp Gly Tyr 270  
 260  
 Leu Gly Glu Thr Ser Ala Gly Pro Gly Lys Ser Leu Pro Val Phe 285  
 275  
 Ala Ile Ile Leu Ile Ile Ser Leu Cys Cys Met Val Val Phe Thr 300  
 290  
 Met Ala Tyr Ile Met Leu Cys Arg Lys Thr Ser Gln Gln Glu His 315  
 305  
 Val Tyr Glu Ala Ala Arg 320

<210> 53  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 53  
 tatccctcca attgagcacc ctgg 24

<210> 54  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 54  
 gtcggaagac atcccaacaa g 21

<210> 55  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 55  
cttcacaatg tcgctgtgct gctc 24

<210> 56  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 56  
agccaaatcc agcagctggc ttac 24

<210> 57  
<211> 50  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 57  
tggatgaccg gagccactac acgtgtgaag tcacctggca gactcctgat 50

<210> 58  
<211> 2458  
<212> DNA  
<213> Homo sapiens

<400> 58  
gcgccgggag cccatctgcc cccaggggca cggggcgcg ggccggctcc 50  
cgcccggcac atggctgcag ccacctcgcg cgcaccccgga ggcgcccgcg 100  
ccagctcgcc cgaggtccgt cggaggcgcc cggccgcccc ggagccaagc 150  
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caactggggc ttccagaaaa agacactctg gatattgaat ggctgctcac 350  
cgataatgaa gggaaccaa aagtgggtgat cacttactcc agtcgtcatg 400  
tctacaataa cttgactgag gaacagaagg gccgagtggc ctttgcttcc 450  
aatttcctgg caggagatgc ctccttgag attgaacctc tgaagcccag 500  
tgatgagggc cgttacacct gtaaggttaa gaattcagg cgctacgtgt 550  
ggagccatgt catcttaaaa gtcttagtga gaccatcaa gcccaagtgt 600  
gagttggaag gagagctgac agaaggaagt gacctgactt tgcaagtgtga 650

gtcatcctct ggcacagagc ccattgtgta ttactggcag cgaatccgag 700  
agaaagaggg agaggatgaa cgtctgcctc ccaaactag gattgactac 750  
aaccaccctg gacgagttct gctgcagaat cttaccatgt cctactctgg 800  
actgtaccag tgcacagcag gcaacgaagc tgggaaggaa agctgtgtgg 850  
tgcgagtaac tgtacagtat gtacaaagca tcggcatggt tgcaggagca 900  
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<211> 373

<212> PRT

<213> Homo sapiens

<400> 59

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ser | Leu | Leu | Leu | Leu | Leu | Leu | Leu | Val | Ser | Tyr | Tyr | Val | Gly | 1   | 5   | 10  | 15 |
| Thr | Leu | Gly | Thr | His | Thr | Glu | Ile | Lys | Arg | Val | Ala | Glu | Glu | Lys | 20  | 25  | 30  |    |
| Val | Thr | Leu | Pro | Cys | His | His | Gln | Leu | Gly | Leu | Pro | Glu | Lys | Asp | 35  | 40  | 45  |    |
| Thr | Leu | Asp | Ile | Glu | Trp | Leu | Leu | Thr | Asp | Asn | Glu | Gly | Asn | Gln | 50  | 55  | 60  |    |
| Lys | Val | Val | Ile | Thr | Tyr | Ser | Ser | Arg | His | Val | Tyr | Asn | Asn | Leu | 65  | 70  | 75  |    |
| Thr | Glu | Glu | Gln | Lys | Gly | Arg | Val | Ala | Phe | Ala | Ser | Asn | Phe | Leu | 80  | 85  | 90  |    |
| Ala | Gly | Asp | Ala | Ser | Leu | Gln | Ile | Glu | Pro | Leu | Lys | Pro | Ser | Asp | 95  | 100 | 105 |    |
| Glu | Gly | Arg | Tyr | Thr | Cys | Lys | Val | Lys | Asn | Ser | Gly | Arg | Tyr | Val | 110 | 115 | 120 |    |
| Trp | Ser | His | Val | Ile | Leu | Lys | Val | Leu | Val | Arg | Pro | Ser | Lys | Pro | 125 | 130 | 135 |    |
| Lys | Cys | Glu | Leu | Glu | Gly | Glu | Leu | Thr | Glu | Gly | Ser | Asp | Leu | Thr | 140 | 145 | 150 |    |
| Leu | Gln | Cys | Glu | Ser | Ser | Ser | Gly | Thr | Glu | Pro | Ile | Val | Tyr | Tyr | 155 | 160 | 165 |    |
| Trp | Gln | Arg | Ile | Arg | Glu | Lys | Glu | Gly | Glu | Asp | Glu | Arg | Leu | Pro |     |     |     |    |



|                 | 170                 | 175                 | 180 |
|-----------------|---------------------|---------------------|-----|
| Pro Lys Ser Arg | Ile Asp Tyr Asn His | Pro Gly Arg Val Leu | Leu |
|                 | 185                 | 190                 | 195 |
| Gln Asn Leu Thr | Met Ser Tyr Ser Gly | Leu Tyr Gln Cys Thr | Ala |
|                 | 200                 | 205                 | 210 |
| Gly Asn Glu Ala | Gly Lys Glu Ser Cys | Val Val Arg Val Thr | Val |
|                 | 215                 | 220                 | 225 |
| Gln Tyr Val Gln | Ser Ile Gly Met Val | Ala Gly Ala Val Thr | Gly |
|                 | 230                 | 235                 | 240 |
| Ile Val Ala Gly | Ala Leu Leu Ile Phe | Leu Leu Val Trp Leu | Leu |
|                 | 245                 | 250                 | 255 |
| Ile Arg Arg Lys | Asp Lys Glu Arg Tyr | Glu Glu Glu Glu Arg | Pro |
|                 | 260                 | 265                 | 270 |
| Asn Glu Ile Arg | Glu Asp Ala Glu Ala | Pro Lys Ala Arg Leu | Val |
|                 | 275                 | 280                 | 285 |
| Lys Pro Ser Ser | Ser Ser Ser Gly Ser | Arg Ser Ser Arg Ser | Gly |
|                 | 290                 | 295                 | 300 |
| Ser Ser Ser Thr | Arg Ser Thr Ala Asn | Ser Ala Ser Arg Ser | Gln |
|                 | 305                 | 310                 | 315 |
| Arg Thr Leu Ser | Thr Asp Ala Ala Pro | Gln Pro Gly Leu Ala | Thr |
|                 | 320                 | 325                 | 330 |
| Gln Ala Tyr Ser | Leu Val Gly Pro Glu | Val Arg Gly Ser Glu | Pro |
|                 | 335                 | 340                 | 345 |
| Lys Lys Val His | His Ala Asn Leu Thr | Lys Ala Glu Thr Thr | Pro |
|                 | 350                 | 355                 | 360 |
| Ser Met Ile Pro | Ser Gln Ser Arg Ala | Phe Gln Thr Val     |     |
|                 | 365                 | 370                 |     |

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<220>  
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<211> 43  
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<210> 64

<211> 655

<212> PRT

<213> Homo sapiens

<400> 64

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Gly | Thr | Ser | Pro | Ser | Ser | Ser | Thr | Ala | Leu | Ala | Ser | Cys | Ser | 1   | 5   | 10  | 15 |
| Arg | Ile | Ala | Arg | Arg | Ala | Thr | Ala | Thr | Met | Ile | Ala | Gly | Ser | Leu | 20  | 25  | 30  |    |
| Leu | Leu | Leu | Gly | Phe | Leu | Ser | Thr | Thr | Thr | Ala | Gln | Pro | Glu | Gln | 35  | 40  | 45  |    |
| Lys | Ala | Ser | Asn | Leu | Ile | Gly | Thr | Tyr | Arg | His | Val | Asp | Arg | Ala | 50  | 55  | 60  |    |
| Thr | Gly | Gln | Val | Leu | Thr | Cys | Asp | Lys | Cys | Pro | Ala | Gly | Thr | Tyr | 65  | 70  | 75  |    |
| Val | Ser | Glu | His | Cys | Thr | Asn | Thr | Ser | Leu | Arg | Val | Cys | Ser | Ser | 80  | 85  | 90  |    |
| Cys | Pro | Val | Gly | Thr | Phe | Thr | Arg | His | Glu | Asn | Gly | Ile | Glu | Lys | 95  | 100 | 105 |    |
| Cys | His | Asp | Cys | Ser | Gln | Pro | Cys | Pro | Trp | Pro | Met | Ile | Glu | Lys | 110 | 115 | 120 |    |
| Leu | Pro | Cys | Ala | Ala | Leu | Thr | Asp | Arg | Glu | Cys | Thr | Cys | Pro | Pro | 125 | 130 | 135 |    |
| Gly | Met | Phe | Gln | Ser | Asn | Ala | Thr | Cys | Ala | Pro | His | Thr | Val | Cys | 140 | 145 | 150 |    |
| Pro | Val | Gly | Trp | Gly | Val | Arg | Lys | Lys | Gly | Thr | Glu | Thr | Glu | Asp | 155 | 160 | 165 |    |
| Val | Arg | Cys | Lys | Gln | Cys | Ala | Arg | Gly | Thr | Phe | Ser | Asp | Val | Pro | 170 | 175 | 180 |    |
| Ser | Ser | Val | Met | Lys | Cys | Lys | Ala | Tyr | Thr | Asp | Cys | Leu | Ser | Gln | 185 | 190 | 195 |    |
| Asn | Leu | Val | Val | Ile | Lys | Pro | Gly | Thr | Lys | Glu | Thr | Asp | Asn | Val | 200 | 205 | 210 |    |
| Cys | Gly | Thr | Leu | Pro | Ser | Phe | Ser | Ser | Ser | Thr | Ser | Pro | Ser | Pro | 215 | 220 | 225 |    |
| Gly | Thr | Ala | Ile | Phe | Pro | Arg | Pro | Glu | His | Met | Glu | Thr | His | Glu | 230 | 235 | 240 |    |
| Val | Pro | Ser | Ser | Thr | Tyr | Val | Pro | Lys | Gly | Met | Asn | Ser | Thr | Glu | 245 | 250 | 255 |    |
| Ser | Asn | Ser | Ser | Ala | Ser | Val | Arg | Pro | Lys | Val | Leu | Ser | Ser | Ile | 260 | 265 | 270 |    |
| Gln | Glu | Gly | Thr | Val | Pro | Asp | Asn | Thr | Ser | Ser | Ala | Arg | Gly | Lys | 275 | 280 | 285 |    |

Glu Asp Val Asn Lys Thr Leu Pro Asn Leu Gln Val Val Asn His 300  
 290 295

Gln Gln Gly Pro His His Arg His Ile Leu Lys Leu Leu Pro Ser 315  
 305 310

Met Glu Ala Thr Gly Gly Glu Lys Ser Ser Thr Pro Ile Lys Gly 330  
 320 325

Pro Lys Arg Gly His Pro Arg Gln Asn Leu His Lys His Phe Asp 345  
 335 340

Ile Asn Glu His Leu Pro Trp Met Ile Val Leu Phe Leu Leu Leu 360  
 350 355

Val Leu Val Val Ile Val Val Cys Ser Ile Arg Lys Ser Ser Arg 375  
 365 370

Thr Leu Lys Lys Gly Pro Arg Gln Asp Pro Ser Ala Ile Val Glu 390  
 380 385

Lys Ala Gly Leu Lys Lys Ser Met Thr Pro Thr Gln Asn Arg Glu 405  
 395 400

Lys Trp Ile Tyr Tyr Cys Asn Gly His Gly Ile Asp Ile Leu Lys 420  
 410 415

Leu Val Ala Ala Gln Val Gly Ser Gln Trp Lys Asp Ile Tyr Gln 435  
 425 430

Phe Leu Cys Asn Ala Ser Glu Arg Glu Val Ala Ala Phe Ser Asn 450  
 440 445

Gly Tyr Thr Ala Asp His Glu Arg Ala Tyr Ala Ala Leu Gln His 465  
 455 460

Trp Thr Ile Arg Gly Pro Glu Ala Ser Leu Ala Gln Leu Ile Ser 480  
 470 475

Ala Leu Arg Gln His Arg Arg Asn Asp Val Val Glu Lys Ile Arg 495  
 485 490

Gly Leu Met Glu Asp Thr Thr Gln Leu Glu Thr Asp Lys Leu Ala 510  
 500 505

Leu Pro Met Ser Pro Ser Pro Leu Ser Pro Ser Pro Ile Pro Ser 525  
 515 520

Pro Asn Ala Lys Leu Glu Asn Ser Ala Leu Leu Thr Val Glu Pro 540  
 530 535

Ser Pro Gln Asp Lys Asn Lys Gly Phe Phe Val Asp Glu Ser Glu 555  
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Pro Leu Leu Arg Cys Asp Ser Thr Ser Ser Gly Ser Ser Ala Leu 570  
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Ser Arg Asn Gly Ser Phe Ile Thr Lys Glu Lys Lys Asp Thr Val  
 575 580 585  
 Leu Arg Gln Val Arg Leu Asp Pro Cys Asp Leu Gln Pro Ile Phe  
 590 600  
 Asp Asp Met Leu His Phe Leu Asn Pro Glu Glu Leu Arg Val Ile  
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 Glu Glu Ile Pro Gln Ala Glu Asp Lys Leu Asp Arg Leu Phe Glu  
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<400> 65  
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<210> 66  
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<400> 66  
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<400> 68

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<211> 453

<212> PRT

<213> Homo sapiens

<400> 69

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| Met | Gly | Glu | Asn | Asp | Pro | Pro | Ala | Val | Glu | Ala | Pro | Phe | Ser | Phe |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ser | Leu | Phe | Gly | Leu | Asp | Asp | Leu | Lys | Ile | Ser | Pro | Val | Ala |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Asp | Ala | Asp | Ala | Val | Ala | Ala | Gln | Ile | Leu | Ser | Leu | Leu | Pro |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Lys | Phe | Phe | Pro | Ile | Ile | Val | Ile | Gly | Ile | Ile | Ala | Leu | Ile |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

|   |     |  |     |  |     |
|---|-----|--|-----|--|-----|
|   | 50  |  | 55  |  | 60  |
| Leu Ala Leu Ala Ile Gly Leu Gly Ile His Phe Asp Cys Ser Gly | 65  |  | 70  |  | 75  |
| Lys Tyr Arg Cys Arg Ser Ser Phe Lys Cys Ile Glu Leu Ile Ala | 80  |  | 85  |  | 90  |
| Arg Cys Asp Gly Val Ser Asp Cys Lys Asp Gly Glu Asp Glu Tyr | 95  |  | 100 |  | 105 |
| Arg Cys Val Arg Val Gly Gly Gln Asn Ala Val Leu Gln Val Phe | 110 |  | 115 |  | 120 |
| Thr Ala Ala Ser Trp Lys Thr Met Cys Ser Asp Asp Trp Lys Gly | 125 |  | 130 |  | 135 |
| His Tyr Ala Asn Val Ala Cys Ala Gln Leu Gly Phe Pro Ser Tyr | 140 |  | 145 |  | 150 |
| Val Ser Ser Asp Asn Leu Arg Val Ser Ser Leu Glu Gly Gln Phe | 155 |  | 160 |  | 165 |
| Arg Glu Glu Phe Val Ser Ile Asp His Leu Leu Pro Asp Asp Lys | 170 |  | 175 |  | 180 |
| Val Thr Ala Leu His His Ser Val Tyr Val Arg Glu Gly Cys Ala | 185 |  | 190 |  | 195 |
| Ser Gly His Val Val Thr Leu Gln Cys Thr Ala Cys Gly His Arg | 200 |  | 205 |  | 210 |
| Arg Gly Tyr Ser Ser Arg Ile Val Gly Gly Asn Met Ser Leu Leu | 215 |  | 220 |  | 225 |
| Ser Gln Trp Pro Trp Gln Ala Ser Leu Gln Phe Gln Gly Tyr His | 230 |  | 235 |  | 240 |
| Leu Cys Gly Gly Ser Val Ile Thr Pro Leu Trp Ile Ile Thr Ala | 245 |  | 250 |  | 255 |
| Ala His Cys Val Tyr Asp Leu Tyr Leu Pro Lys Ser Trp Thr Ile | 260 |  | 265 |  | 270 |
| Gln Val Gly Leu Val Ser Leu Leu Asp Asn Pro Ala Pro Ser His | 275 |  | 280 |  | 285 |
| Leu Val Glu Lys Ile Val Tyr His Ser Lys Tyr Lys Pro Lys Arg | 290 |  | 295 |  | 300 |
| Leu Gly Asn Asp Ile Ala Leu Met Lys Leu Ala Gly Pro Leu Thr | 305 |  | 310 |  | 315 |
| Phe Asn Glu Met Ile Gln Pro Val Cys Leu Pro Asn Ser Glu Glu | 320 |  | 325 |  | 330 |
| Asn Phe Pro Asp Gly Lys Val Cys Trp Thr Ser Gly Trp Gly Ala |     |  |     |  |     |

|   |                         |     |     |
|---|-------------------------|-----|-----|
|   | 335                     | 340 | 345 |
| Thr Glu Asp Gly Gly Asp Ala Ser Pro                         | Val Leu Asn His Ala Ala |     |     |
| 350   | 355                     | 360 |     |
| Val Pro Leu Ile Ser Asn Lys Ile Cys Asn His Arg Asp Val Tyr |                         |     |     |
| 365   | 370                     | 375 |     |
| Gly Gly Ile Ile Ser Pro Ser Met Leu Cys Ala Gly Tyr Leu Thr |                         |     |     |
| 380   | 385                     | 390 |     |
| Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val |                         |     |     |
| 395   | 400                     | 405 |     |
| Cys Gln Glu Arg Arg Leu Trp Lys Leu Val Gly Ala Thr Ser Phe |                         |     |     |
| 410   | 415                     | 420 |     |
| Gly Ile Gly Cys Ala Glu Val Asn Lys Pro Gly Val Tyr Thr Arg |                         |     |     |
| 425   | 430                     | 435 |     |
| Val Thr Ser Phe Leu Asp Trp Ile His Glu Gln Met Glu Arg Asp |                         |     |     |
| 440   | 445                     | 450 |     |
| Leu Lys Thr   |                         |     |     |

<210> 70  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 70  
 tgacatcgcc cttatgaagc tggc 24

<210> 71  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 71  
 tacacgtccc tgtggttgca gatc 24

<210> 72  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 72

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<210> 73

<211> 3305

<212> DNA

<213> Homo sapiens

<400> 73

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gcacgcacac acacgggggg aaactttttt aaaaatgaaa ggctagaaga 150  
gctcagcggc ggcgcgggcg ctgcgcgagg gctccggagc tgactcgccg 200  
aggcaggaaa tccctccggt cgcgacgccc ggccccggct cggcgccccg 250  
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gccggcgacg atggcagcgc gcccgctgcc cgtgtcccc gcccgcgccc 350  
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tcggagtggg gacctctgga tccagtgaa gagcttcgac tccaagaatc 500  
atccagaagt gctgaatatt cgactacaac gggaaagcaa agaactgac 550  
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 gagaaagggc ggtgaactct ggctctttgc tgtggacatg cgtgaccagc 3150  
 agtactcagg tttgagggtt tgcagaaagc caggaaccc acagagtcac 3200  
 caacccttca ttaacaagt aagaatgtta aaaagtgaaa acaatgtaag 3250  
 agcctaactc catcccccggt ggccattact gcataaaata gagtgcattt 3300  
 gaaat 3305

<210> 74  
 <211> 735  
 <212> PRT  
 <213> Homo sapiens

<400> 74  
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 Leu Ala Leu Ala Gly Ala Leu Leu Ala Pro Cys Glu Ala Arg Gly 30  
 20 25  
 Val Ser Leu Trp Asn Gln Gly Arg Ala Asp Glu Val Val Ser Ala 45  
 35 40  
 Ser Val Arg Ser Gly Asp Leu Trp Ile Pro Val Lys Ser Phe Asp 60  
 50 55  
 Ser Lys Asn His Pro Glu Val Leu Asn Ile Arg Leu Gln Arg Glu 75  
 65 70  
 Ser Lys Glu Leu Ile Ile Asn Leu Glu Arg Asn Glu Gly Leu Ile 90  
 80 85  
 Ala Ser Ser Phe Thr Glu Thr His Tyr Leu Gln Asp Gly Thr Asp 105  
 95 100  
 Val Ser Leu Ala Arg Asn Tyr Thr Gly His Cys Tyr Tyr His Gly 120  
 110 115

|   |     |     |     |
|---|-----|-----|-----|
| His Val Arg Gly Tyr Ser Asp Ser Ala Val Ser Leu Ser Thr Cys | 125 | 130 | 135 |
| Ser Gly Leu Arg Gly Leu Ile Val Phe Glu Asn Glu Ser Tyr Val | 140 | 145 | 150 |
| Leu Glu Pro Met Lys Ser Ala Thr Asn Arg Tyr Lys Leu Phe Pro | 155 | 160 | 165 |
| Ala Lys Lys Leu Lys Ser Val Arg Gly Ser Cys Gly Ser His His | 170 | 175 | 180 |
| Asn Thr Pro Asn Leu Ala Ala Lys Asn Val Phe Pro Pro Pro Ser | 185 | 190 | 195 |
| Gln Thr Trp Ala Arg Arg His Lys Arg Glu Thr Leu Lys Ala Thr | 200 | 205 | 210 |
| Lys Tyr Val Glu Leu Val Ile Val Ala Asp Asn Arg Glu Phe Gln | 215 | 220 | 225 |
| Arg Gln Gly Lys Asp Leu Glu Lys Val Lys Gln Arg Leu Ile Glu | 230 | 235 | 240 |
| Ile Ala Asn His Val Asp Lys Phe Tyr Arg Pro Leu Asn Ile Arg | 245 | 250 | 255 |
| Ile Val Leu Val Gly Val Glu Val Trp Asn Asp Met Asp Lys Cys | 260 | 265 | 270 |
| Ser Val Ser Gln Asp Pro Phe Thr Ser Leu His Glu Phe Leu Asp | 275 | 280 | 285 |
| Trp Arg Lys Met Lys Leu Leu Pro Arg Lys Ser His Asp Asn Ala | 290 | 295 | 300 |
| Gln Leu Val Ser Gly Val Tyr Phe Gln Gly Thr Thr Ile Gly Met | 305 | 310 | 315 |
| Ala Pro Ile Met Ser Met Cys Thr Ala Asp Gln Ser Gly Gly Ile | 320 | 325 | 330 |
| Val Met Asp His Ser Asp Asn Pro Leu Gly Ala Ala Val Thr Leu | 335 | 340 | 345 |
| Ala His Glu Leu Gly His Asn Phe Gly Met Asn His Asp Thr Leu | 350 | 355 | 360 |
| Asp Arg Gly Cys Ser Cys Gln Met Ala Val Glu Lys Gly Gly Cys | 365 | 370 | 375 |
| Ile Met Asn Ala Ser Thr Gly Tyr Pro Phe Pro Met Val Phe Ser | 380 | 385 | 390 |
| Ser Cys Ser Arg Lys Asp Leu Glu Thr Ser Leu Glu Lys Gly Met | 395 | 400 | 405 |

Gly Val Cys Leu Phe Asn Leu Pro Glu Val Arg Glu Ser Phe Gly 420  
 410 415

Gly Gln Lys Cys Gly Asn Arg Phe Val Glu Glu Gly Glu Glu Cys 435  
 425 430

Asp Cys Gly Glu Pro Glu Glu Cys Met Asn Arg Cys Cys Asn Ala 450  
 440 445

Thr Thr Cys Thr Leu Lys Pro Asp Ala Val Cys Ala His Gly Leu 465  
 455 460

Cys Cys Glu Asp Cys Gln Leu Lys Pro Ala Gly Thr Ala Cys Arg 480  
 470 475

Asp Ser Ser Asn Ser Cys Asp Leu Pro Glu Phe Cys Thr Gly Ala 495  
 485 490

Ser Pro His Cys Pro Ala Asn Val Tyr Leu His Asp Gly His Ser 510  
 500 505

Cys Gln Asp Val Asp Gly Tyr Cys Tyr Asn Gly Ile Cys Gln Thr 525  
 515 520

His Glu Gln Gln Cys Val Thr Leu Trp Gly Pro Gly Ala Lys Pro 540  
 530 535

Ala Pro Gly Ile Cys Phe Glu Arg Val Asn Ser Ala Gly Asp Pro 555  
 545 550

Tyr Gly Asn Cys Gly Lys Val Ser Lys Ser Ser Phe Ala Lys Cys 570  
 560 565

Glu Met Arg Asp Ala Lys Cys Gly Lys Ile Gln Cys Gln Gly Gly 585  
 575 580

Ala Ser Arg Pro Val Ile Gly Thr Asn Ala Val Ser Ile Glu Thr 600  
 590 595

Asn Ile Pro Leu Gln Gln Gly Gly Arg Ile Leu Cys Arg Gly Thr 615  
 605 610

His Val Tyr Leu Gly Asp Asp Met Pro Asp Pro Gly Leu Val Leu 630  
 620 625

Ala Gly Thr Lys Cys Ala Asp Gly Lys Ile Cys Leu Asn Arg Gln 645  
 635 640

Cys Gln Asn Ile Ser Val Phe Gly Val His Glu Cys Ala Met Gln 660  
 650 655

Cys His Gly Arg Gly Val Cys Asn Asn Arg Lys Asn Cys His Cys 675  
 665 670

Glu Ala His Trp Ala Pro Pro Phe Cys Asp Lys Phe Gly Phe Gly 690  
 680 685



Gly Ser Thr Asp Ser Gly Pro Ile Arg Gln Ala Glu Ala Arg Gln  
695 700 705  
Glu Ala Ala Glu Ser Asn Arg Glu Arg Gly Gln Gly Gln Glu Pro  
710 715 720  
Val Gly Ser Gln Glu His Ala Ser Thr Ala Ser Leu Thr Leu Ile  
725 730 735

<210> 75  
<211> 483  
<212> DNA  
<213> Homo sapiens

<220>  
<221> unsure  
<222> 30, 94, 143, 156, 163, 179, 193, 369, 371, 381, 390, 473  
<223> unknown base

<400> 75  
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ctgacaacga aaacaaaaca gttttggggg ttcaggaggg gaantccagc 100  
ctaccaggga agtttgcaga aacagtgcaa ggaagggcag ganttcctgg 150  
ttgagntttt tgntaaaaca tggacatgnt tcagtgtctgc tcntgagaga 200  
gtagcagggt accacttttg gcaggcccca gccctgcagc aaggaggaag 250  
aggactcaaa agtttggcct ttcactgagc ctccacagca gtgggggaga 300  
agcaagggtt gggcccagtg tcccctttcc ccagtgcac ctcagccttg 350  
gcagccctga taactggtnt ntggctgcaa nttaatgctn tgatatggct 400  
tttagcattt attatatgaa aatagcaggg ttttagtttt taatttatca 450  
gagaccctgc caccattcc atntccatcc aag 483

<210> 76  
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<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 76  
gtctcagcac gtgttctggc ctcaggg 27

<210> 77  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 77  
catgagcatg tgcacggc 18

<210> 78  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 78  
tacctgcacg atgggcac 18

<210> 79  
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<212> DNA  
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<220>  
<223> Synthetic oligonucleotide probe

<400> 79  
cactgggcac ctcccttc 18

<210> 80  
<211> 26  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 80  
ctccaggctg gtctccaagt ccttcc 26

<210> 81  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 81  
tccctgttgg actctgcagc ttcc 24

<210> 82  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 82  
cttcgctggg aagagtttg 19

<210> 83  
<211> 50  
<212> DNA  
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<220>  
<223> Synthetic oligonucleotide probe

<400> 83  
gtgcaaccaa cagatacaaa ctcttcccag cgaagaagct gaaaagcgtc 50

<210> 84  
<211> 1714  
<212> DNA  
<213> Homo sapiens

<400> 84  
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atgatctgcc cgcctcggcc tcccaaagtg ctgggattac aggcgagtgc 150  
aaccacaccc ggccacaaac tttttaagaa gttaatgaaa ccataccttt 200  
tacattttta atgacaggaa aatgctcaca ataattgtta acccaaaatt 250  
ctggatacaa aagtacaatc ttactgtgt aaatacatgt atatgtacta 300  
tatgaaaata taccaaatat caataatact tatctctggg taaaaacctc 350  
ttctcatacc ctgtgctaac aacttttaac aaaaaatttg catcactttt 400  
aagaatcaag aaaaatttct gaaggtcata tgggacagaa aaaaaacca 450  
agggaaaaat cacgccactt gggaaaaaaa gattcgaaat ctgccttttt 500  
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 ctggccaaaa tggtgaaacc ccactgtac taaaaataca aatattgact 1250  
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 ggacaatcac ttgaactcag gaggcagagg ttgcagttag ctgagatcgc 1350  
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 gatggtggca ggcacctgga gtcccagcta ctccggaggc tgaggcagga 1600  
 gaatagcgtg aactcaggag gcggagcttg cagttagccg agattgcgct 1650  
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 aaaaaaaaaa aaaa 1714

<210> 85  
 <211> 67  
 <212> PRT  
 <213> Homo sapiens

<400> 85  
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 20 25  
 Thr Ser Met Pro Glu Ala Thr Ala Ala Glu Thr Thr Lys Pro Ser 45  
 35 40  
 Asn Ser Ala Leu Gln Pro Thr Ala Gly Leu Leu Val Val Leu Leu 60  
 50 60  
 Ala Leu Leu His Leu Tyr His 65

<210> 86  
 <211> 23

<212> DNA  
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<220>  
<223> Synthetic oligonucleotide probe

<400> 86  
acgggcacac tggatcccaa atg 23

<210> 87  
<211> 29  
<212> DNA  
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<220>  
<223> Synthetic oligonucleotide probe

<400> 87  
ggtagagatg tagaaggga agcaagacc 29

<210> 88  
<211> 50  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 88  
gctccctacc cgtgcagggt tcttcatttg ttcctttaac cagtatgccg 50

<210> 89  
<211> 2956  
<212> DNA  
<213> Homo sapiens

<400> 89  
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gctgctgctg ggccatggcg gcggcgggcg ctggggcgcc cgggcccagg 150  
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 <212> PRT  
 <213> Homo sapiens

<400> 90  
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 Gly Gly Arg Trp Gly Ala Arg Ala Gln Glu Ala Ala Ala Ala Ala  
 35 40 45

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|
| Ala | Asp | Gly | Pro | Pro | Ala | Ala | Asp | Gly | Glu | Asp | Gly | Gln | Asp | Pro |  |  |  |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |  |  |  |
| His | Ser | Lys | His | Leu | Tyr | Thr | Ala | Asp | Met | Phe | Thr | His | Gly | Ile |  |  |  |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |  |  |  |
| Gln | Ser | Ala | Ala | His | Phe | Val | Met | Phe | Phe | Ala | Pro | Trp | Cys | Gly |  |  |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |  |  |  |
| His | Cys | Gln | Arg | Leu | Gln | Pro | Thr | Trp | Asn | Asp | Leu | Gly | Asp | Lys |  |  |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |  |  |  |
| Tyr | Asn | Ser | Met | Glu | Asp | Ala | Lys | Val | Tyr | Val | Ala | Lys | Val | Asp |  |  |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |  |  |  |
| Cys | Thr | Ala | His | Ser | Asp | Val | Cys | Ser | Ala | Gln | Gly | Val | Arg | Gly |  |  |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |  |  |
| Tyr | Pro | Thr | Leu | Lys | Leu | Phe | Lys | Pro | Gly | Gln | Glu | Ala | Val | Lys |  |  |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |  |  |
| Tyr | Gln | Gly | Pro | Arg | Asp | Phe | Gln | Thr | Leu | Glu | Asn | Trp | Met | Leu |  |  |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |  |  |
| Gln | Thr | Leu | Asn | Glu | Glu | Pro | Val | Thr | Pro | Glu | Pro | Glu | Val | Glu |  |  |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |  |  |
| Pro | Pro | Ser | Ala | Pro | Glu | Leu | Lys | Gln | Gly | Leu | Tyr | Glu | Leu | Ser |  |  |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |  |  |
| Ala | Ser | Asn | Phe | Glu | Leu | His | Val | Ala | Gln | Gly | Asp | His | Phe | Ile |  |  |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |  |  |
| Lys | Phe | Phe | Ala | Pro | Trp | Cys | Gly | His | Cys | Lys | Ala | Leu | Ala | Pro |  |  |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |  |  |
| Thr | Trp | Glu | Gln | Leu | Ala | Leu | Gly | Leu | Glu | His | Ser | Glu | Thr | Val |  |  |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |  |  |
| Lys | Ile | Gly | Lys | Val | Asp | Cys | Thr | Gln | His | Tyr | Glu | Leu | Cys | Ser |  |  |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |  |  |
| Gly | Asn | Gln | Val | Arg | Gly | Tyr | Pro | Thr | Leu | Leu | Trp | Phe | Arg | Asp |  |  |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |  |  |
| Gly | Lys | Lys | Val | Asp | Gln | Tyr | Lys | Gly | Lys | Arg | Asp | Leu | Glu | Ser |  |  |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |  |  |
| Leu | Arg | Glu | Tyr | Val | Glu | Ser | Gln | Leu | Gln | Arg | Thr | Glu | Thr | Gly |  |  |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |  |  |
| Ala | Thr | Glu | Thr | Val | Thr | Pro | Ser | Glu | Ala | Pro | Val | Leu | Ala | Ala |  |  |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |  |  |  |
| Glu | Pro | Glu | Ala | Asp | Lys | Gly | Thr | Val | Leu | Ala | Leu | Thr | Glu | Asn |  |  |  |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |  |  |  |



Asn Phe Asp Asp Thr Ile Ala Glu Gly Ile Thr Phe Ile Lys Phe  
 335 340 345  
 Tyr Ala Pro Trp Cys Gly His Cys Lys Thr Leu Ala Pro Thr Trp  
 350 355 360  
 Glu Glu Leu Ser Lys Lys Glu Phe Pro Gly Leu Ala Gly Val Lys  
 365 370 375  
 Ile Ala Glu Val Asp Cys Thr Ala Glu Arg Asn Ile Cys Ser Lys  
 380 385 390  
 Tyr Ser Val Arg Gly Tyr Pro Thr Leu Leu Leu Phe Arg Gly Gly  
 395 400 405  
 Lys Lys Val Ser Glu His Ser Gly Gly Arg Asp Leu Asp Ser Leu  
 410 415 420  
 His Arg Phe Val Leu Ser Gln Ala Lys Asp Glu Leu  
 425 430

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<220>  
 <223> Synthetic oligonucleotide probe

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<210> 92  
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<220>  
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<400> 92  
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<210> 93  
 <211> 24  
 <212> DNA  
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<220>  
 <223> Synthetic oligonucleotide probe

<400> 93  
 aagtggtcgc cttgtgcaac gtgc 24

<210> 94  
 <211> 23

<212> DNA  
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<220>  
<223> Synthetic oligonucleotide probe

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<210> 95  
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<220>  
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<210> 96  
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<212> DNA  
<213> Homo sapiens

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gtctggatat tgatagccgt cctaccgctg aagtctgtgc cacacacaca 150  
atctcaccag gacccaaagg agatgatggg gaaaaaggag atccaggaga 200  
agaggggaaag catggcaaag tgggacgcat ggggccgaaa ggaattaaag 250  
gagaactggg tgatatggga gatcagggca atattggcaa gactgggccc 300  
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ttgttggaaga actggatatt agtattgctc ggctcaagac atctatgaag 450  
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cgtgaatgac cttgaaaggg agggacagta catgtccaca gacaacactc 700  
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 aaaaaaaaaa aaaaaa 1016

<210> 97  
 <211> 277  
 <212> PRT  
 <213> Homo sapiens

<400> 97  
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 20 25  
 Asp Ser Arg Pro Thr Ala Glu Val Cys Ala Thr His Thr Ile Ser 45  
 35 40  
 Pro Gly Pro Lys Gly Asp Asp Gly Glu Lys Gly Asp Pro Gly Glu 60  
 50 55  
 Glu Gly Lys His Gly Lys Val Gly Arg Met Gly Pro Lys Gly Ile 75  
 65 70  
 Lys Gly Glu Leu Gly Asp Met Gly Asp Gln Gly Asn Ile Gly Lys 90  
 80 85  
 Thr Gly Pro Ile Gly Lys Lys Gly Asp Lys Gly Glu Lys Gly Leu 105  
 95 100  
 Leu Gly Ile Pro Gly Glu Lys Gly Lys Ala Gly Thr Val Cys Asp 120  
 110 115  
 Cys Gly Arg Tyr Arg Lys Phe Val Gly Gln Leu Asp Ile Ser Ile 135  
 125 130  
 Ala Arg Leu Lys Thr Ser Met Lys Phe Val Lys Asn Val Ile Ala 150  
 140 145  
 Gly Ile Arg Glu Thr Glu Glu Lys Phe Tyr Tyr Ile Val Gln Glu 165  
 155 160  
 Glu Lys Asn Tyr Arg Glu Ser Leu Thr His Cys Arg Ile Arg Gly 180  
 170 175  
 Gly Met Leu Ala Met Pro Lys Asp Glu Ala Ala Asn Thr Leu Ile 195  
 185 190  
 Ala Asp Tyr Val Ala Lys Ser Gly Phe Phe Arg Val Phe Ile Gly

200 205 210  
 Val Asn Asp Leu Glu Arg Glu Gly Gln Tyr Met Ser Thr Asp Asn  
 215 220 225  
 Thr Pro Leu Gln Asn Tyr Ser Asn Trp Asn Glu Gly Glu Pro Ser  
 230 235 240  
 Asp Pro Tyr Gly His Glu Asp Cys Val Glu Met Leu Ser Ser Gly  
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 Arg Trp Asn Asp Thr Glu Cys His Leu Thr Met Tyr Phe Val Cys  
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 Glu Phe Ile Lys Lys Lys Lys  
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<210> 98  
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<400> 98  
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<210> 99  
 <211> 24  
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<220>  
 <223> Synthetic oligonucleotide probe

<400> 99  
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 <212> DNA  
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 <212> DNA  
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<210> 102  
 <211> 730  
 <212> PRT  
 <213> Homo sapiens

<400> 102  
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 35 40  
 Gly Ser Met Ala Ala Leu Leu Leu Leu Pro Leu Leu Leu Leu Leu 60  
 50 55  
 Pro Leu Leu Leu Leu Lys Leu His Leu Trp Pro Gln Leu Arg Trp 75  
 65 70  
 Leu Pro Ala Asp Leu Ala Phe Ala Val Arg Ala Leu Cys Cys Lys 90  
 80 85  
 Arg Ala Leu Arg Ala Arg Ala Leu Ala Ala Ala Ala Asp Pro 105  
 95 100  
 Glu Gly Pro Glu Gly Gly Cys Ser Leu Ala Trp Arg Leu Ala Glu 120  
 110 115  
 Leu Ala Gln Gln Arg Ala Ala His Thr Phe Leu Ile His Gly Ser 135  
 125 130  
 Arg Arg Phe Ser Tyr Ser Glu Ala Glu Arg Glu Ser Asn Arg Ala 150  
 140 145  
 Ala Arg Ala Phe Leu Arg Ala Leu Gly Trp Asp Trp Gly Pro Asp 165  
 155 160  
 Gly Gly Asp Ser Gly Glu Gly Ser Ala Gly Glu Gly Glu Arg Ala 180  
 170 175  
 Ala Pro Gly Ala Gly Asp Ala Ala Ala Gly Ser Gly Ala Glu Phe 195  
 185 190  
 Ala Gly Gly Asp Gly Ala Ala Arg Gly Gly Gly Ala Ala Ala Pro 210  
 200 205  
 Leu Ser Pro Gly Ala Thr Val Ala Leu Leu Leu Pro Ala Gly Pro 225  
 215 220  
 Glu Phe Leu Trp Leu Trp Phe Gly Leu Ala Lys Ala Gly Leu Arg 240  
 230 235  
 Thr Ala Phe Val Pro Thr Ala Leu Arg Arg Gly Pro Leu Leu His 255  
 245 250  
 Cys Leu Arg Ser Cys Gly Ala Arg Ala Leu Val Leu Ala Pro Glu 270  
 260 265  
 Phe Leu Glu Ser Leu Glu Pro Asp Leu Pro Ala Leu Arg Ala Met 285  
 275 280  
 Gly Leu His Leu Trp Ala Ala Gly Pro Gly Thr His Pro Ala Gly 300  
 290 295  
 Ile Ser Asp Leu Leu Ala Glu Val Ser Ala Glu Val Asp Gly Pro 315  
 305 310

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Val | Pro | Gly | Tyr | Leu | Ser | Ser | Pro | Gln | Ser | Ile | Thr | Asp | Thr | Cys |  |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |  |
| Leu | Tyr | Ile | Phe | Thr | Ser | Gly | Thr | Thr | Gly | Leu | Pro | Lys | Ala | Ala |  |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |  |
| Arg | Ile | Ser | His | Leu | Lys | Ile | Leu | Gln | Cys | Gln | Gly | Phe | Tyr | Gln |  |
|     |     |     |     | 350 |     |     |     |     | 355 |     |     |     |     | 360 |  |
| Leu | Cys | Gly | Val | His | Gln | Glu | Asp | Val | Ile | Tyr | Leu | Ala | Leu | Pro |  |
|     |     |     |     | 365 |     |     |     |     | 370 |     |     |     |     | 375 |  |
| Leu | Tyr | His | Met | Ser | Gly | Ser | Leu | Leu | Gly | Ile | Val | Gly | Cys | Met |  |
|     |     |     |     | 380 |     |     |     |     | 385 |     |     |     |     | 390 |  |
| Gly | Ile | Gly | Ala | Thr | Val | Val | Leu | Lys | Ser | Lys | Phe | Ser | Ala | Gly |  |
|     |     |     |     | 395 |     |     |     |     | 400 |     |     |     |     | 405 |  |
| Gln | Phe | Trp | Glu | Asp | Cys | Gln | Gln | His | Arg | Val | Thr | Val | Phe | Gln |  |
|     |     |     |     | 410 |     |     |     |     | 415 |     |     |     |     | 420 |  |
| Tyr | Ile | Gly | Glu | Leu | Cys | Arg | Tyr | Leu | Val | Asn | Gln | Pro | Pro | Ser |  |
|     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |     | 435 |  |
| Lys | Ala | Glu | Arg | Gly | His | Lys | Val | Arg | Leu | Ala | Val | Gly | Ser | Gly |  |
|     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     | 450 |  |
| Leu | Arg | Pro | Asp | Thr | Trp | Glu | Arg | Phe | Val | Arg | Arg | Phe | Gly | Pro |  |
|     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     | 465 |  |
| Leu | Gln | Val | Leu | Glu | Thr | Tyr | Gly | Leu | Thr | Glu | Gly | Asn | Val | Ala |  |
|     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |  |
| Thr | Ile | Asn | Tyr | Thr | Gly | Gln | Arg | Gly | Ala | Val | Gly | Arg | Ala | Ser |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |  |
| Trp | Leu | Tyr | Lys | His | Ile | Phe | Pro | Phe | Ser | Leu | Ile | Arg | Tyr | Asp |  |
|     |     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |  |
| Val | Thr | Thr | Gly | Glu | Pro | Ile | Arg | Asp | Pro | Gln | Gly | His | Cys | Met |  |
|     |     |     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |  |
| Ala | Thr | Ser | Pro | Gly | Glu | Pro | Gly | Leu | Leu | Val | Ala | Pro | Val | Ser |  |
|     |     |     |     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |  |
| Gln | Gln | Ser | Pro | Phe | Leu | Gly | Tyr | Ala | Gly | Gly | Pro | Glu | Leu | Ala |  |
|     |     |     |     | 545 |     |     |     |     | 550 |     |     |     |     | 555 |  |
| Gln | Gly | Lys | Leu | Leu | Lys | Asp | Val | Phe | Arg | Pro | Gly | Asp | Val | Phe |  |
|     |     |     |     | 560 |     |     |     |     | 565 |     |     |     |     | 570 |  |
| Phe | Asn | Thr | Gly | Asp | Leu | Leu | Val | Cys | Asp | Asp | Gln | Gly | Phe | Leu |  |
|     |     |     |     | 575 |     |     |     |     | 580 |     |     |     |     | 585 |  |
| Arg | Phe | His | Asp | Arg | Thr | Gly | Asp | Thr | Phe | Arg | Trp | Lys | Gly | Glu |  |
|     |     |     |     | 590 |     |     |     |     | 595 |     |     |     |     | 600 |  |



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 Phe Leu Gln Glu Val Asn Val Tyr Gly Val Thr Val Pro Gly His  
 620 625 630  
 Glu Gly Arg Ala Gly Met Ala Ala Leu Val Leu Arg Pro Pro His  
 635 640 645  
 Ala Leu Asp Leu Met Gln Leu Tyr Thr His Val Ser Glu Asn Leu  
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 Pro Pro Tyr Ala Arg Pro Arg Phe Leu Arg Leu Gln Glu Ser Leu  
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 Ala Thr Thr Glu Thr Phe Lys Gln Gln Lys Val Arg Met Ala Asn  
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 Glu Gly Phe Asp Pro Ser Thr Leu Ser Asp Pro Leu Tyr Val Leu  
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<211> 555

<212> PRT

<213> Homo sapiens

<400> 109

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Pro | Ser | Trp | Ile | Gly | Ala | Val | Ile | Leu | Pro | Leu | Leu | Gly | Leu | 1   | 5   | 10  | 15 |
| Leu | Leu | Ser | Leu | Pro | Ala | Gly | Ala | Asp | Val | Lys | Ala | Arg | Ser | Cys | 20  | 25  | 30  |    |
| Gly | Glu | Val | Arg | Gln | Ala | Tyr | Gly | Ala | Lys | Gly | Phe | Ser | Leu | Ala | 35  | 40  | 45  |    |
| Asp | Ile | Pro | Tyr | Gln | Glu | Ile | Ala | Gly | Glu | His | Leu | Arg | Ile | Cys | 50  | 55  | 60  |    |
| Pro | Gln | Glu | Tyr | Thr | Cys | Cys | Thr | Thr | Glu | Met | Glu | Asp | Lys | Leu | 65  | 70  | 75  |    |
| Ser | Gln | Gln | Ser | Lys | Leu | Glu | Phe | Glu | Asn | Leu | Val | Glu | Glu | Thr | 80  | 85  | 90  |    |
| Ser | His | Phe | Val | Arg | Thr | Thr | Phe | Val | Ser | Arg | His | Lys | Lys | Phe | 95  | 100 | 105 |    |
| Asp | Glu | Phe | Phe | Arg | Glu | Leu | Leu | Glu | Asn | Ala | Glu | Lys | Ser | Leu | 110 | 115 | 120 |    |
| Asn | Asp | Met | Phe | Val | Arg | Thr | Tyr | Gly | Met | Leu | Tyr | Met | Gln | Asn | 125 | 130 | 135 |    |
| Ser | Glu | Val | Phe | Gln | Asp | Leu | Phe | Thr | Glu | Leu | Lys | Arg | Tyr | Tyr | 140 | 145 | 150 |    |

|   |     |     |     |
|---|-----|-----|-----|
| Thr Gly Gly Asn Val Asn Leu Glu Glu Met Leu Asn Asp Phe Trp | 155 | 160 | 165 |
| Ala Arg Leu Leu Glu Arg Met Phe Gln Leu Ile Asn Pro Gln Tyr | 170 | 175 | 180 |
| His Phe Ser Glu Asp Tyr Leu Glu Cys Val Ser Lys Tyr Thr Asp | 185 | 190 | 195 |
| Gln Leu Lys Pro Phe Gly Asp Val Pro Arg Lys Leu Lys Ile Gln | 200 | 205 | 210 |
| Val Thr Arg Ala Phe Ile Ala Ala Arg Thr Phe Val Gln Gly Leu | 215 | 220 | 225 |
| Thr Val Gly Arg Glu Val Ala Asn Arg Val Ser Lys Val Ser Pro | 230 | 235 | 240 |
| Thr Pro Gly Cys Ile Arg Ala Leu Met Lys Met Leu Tyr Cys Pro | 245 | 250 | 255 |
| Tyr Cys Arg Gly Leu Pro Thr Val Arg Pro Cys Asn Asn Tyr Cys | 260 | 265 | 270 |
| Leu Asn Val Met Lys Gly Cys Leu Ala Asn Gln Ala Asp Leu Asp | 275 | 280 | 285 |
| Thr Glu Trp Asn Leu Phe Ile Asp Ala Met Leu Leu Val Ala Glu | 290 | 295 | 300 |
| Arg Leu Glu Gly Pro Phe Asn Ile Glu Ser Val Met Asp Pro Ile | 305 | 310 | 315 |
| Asp Val Lys Ile Ser Glu Ala Ile Met Asn Met Gln Glu Asn Ser | 320 | 325 | 330 |
| Met Gln Val Ser Ala Lys Val Phe Gln Gly Cys Gly Gln Pro Lys | 335 | 340 | 345 |
| Pro Ala Pro Ala Leu Arg Ser Ala Arg Ser Ala Pro Glu Asn Phe | 350 | 355 | 360 |
| Asn Thr Arg Phe Arg Pro Tyr Asn Pro Glu Glu Arg Pro Thr Thr | 365 | 370 | 375 |
| Ala Ala Gly Thr Ser Leu Asp Arg Leu Val Thr Asp Ile Lys Glu | 380 | 385 | 390 |
| Lys Leu Lys Leu Ser Lys Lys Val Trp Ser Ala Leu Pro Tyr Thr | 395 | 400 | 405 |
| Ile Cys Lys Asp Glu Ser Val Thr Ala Gly Thr Ser Asn Glu Glu | 410 | 415 | 420 |
| Glu Cys Trp Asn Gly His Ser Lys Ala Arg Tyr Leu Pro Glu Ile | 425 | 430 | 435 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Asn | Asp | Gly | Leu | Thr | Asn | Gln | Ile | Asn | Asn | Pro | Glu | Val | Asp |  |
|     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     | 450 |  |
| Val | Asp | Ile | Thr | Arg | Pro | Asp | Thr | Phe | Ile | Arg | Gln | Gln | Ile | Met |  |
|     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     | 465 |  |
| Ala | Leu | Arg | Val | Met | Thr | Asn | Lys | Leu | Lys | Asn | Ala | Tyr | Asn | Gly |  |
|     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |  |
| Asn | Asp | Val | Asn | Phe | Gln | Asp | Thr | Ser | Asp | Glu | Ser | Ser | Gly | Ser |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |  |
| Gly | Ser | Gly | Ser | Gly | Cys | Met | Asp | Asp | Val | Cys | Pro | Thr | Glu | Phe |  |
|     |     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |  |
| Glu | Phe | Val | Thr | Thr | Glu | Ala | Pro | Ala | Val | Asp | Pro | Asp | Arg | Arg |  |
|     |     |     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |  |
| Glu | Val | Asp | Ser | Ser | Ala | Ala | Gln | Arg | Gly | His | Ser | Leu | Leu | Ser |  |
|     |     |     |     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |  |
| Trp | Ser | Leu | Thr | Cys | Ile | Val | Leu | Ala | Leu | Gln | Arg | Leu | Cys | Arg |  |
|     |     |     |     | 545 |     |     |     |     | 550 |     |     |     |     | 555 |  |

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<210> 111  
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<400> 111  
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<210> 113  
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 <212> PRT  
 <213> Homo sapiens

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 35 40 45  
 Trp Gly Gln Ala Leu Glu Glu Glu Glu Gly Ala Leu Leu Ala  
 50 55 60  
 Gln Ala Gly Glu Lys Leu Glu Pro Ser Thr Thr Ser Thr Ser Gln  
 65 70 75  
 Pro His Leu Ile Phe Ile Leu Ala Asp Asp Gln Gly Phe Arg Asp  
 80 85 90  
 Val Gly Tyr His Gly Ser Glu Ile Lys Thr Pro Thr Leu Asp Lys  
 95 100 105  
 Leu Ala Ala Glu Gly Val Lys Leu Glu Asn Tyr Tyr Val Gln Pro  
 110 115 120  
 Ile Cys Thr Pro Ser Arg Ser Gln Phe Ile Thr Gly Lys Tyr Gln  
 125 130 135  
 Ile His Thr Gly Leu Gln His Ser Ile Ile Arg Pro Thr Gln Pro  
 140 145 150

|                 |                     |                         |     |     |     |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Asn Cys Leu Pro | Leu Asp Asn Ala Thr | Leu Pro Gln Lys Leu Lys | 155 | 160 | 165 |
| Glu Val Gly Tyr | Ser Thr His Met Val | Gly Lys Trp His Leu Gly | 170 | 175 | 180 |
| Phe Asn Arg Lys | Glu Cys Met Pro Thr | Arg Arg Gly Phe Asp Thr | 185 | 190 | 195 |
| Phe Phe Gly Ser | Leu Leu Gly Ser Gly | Asp Tyr Tyr Thr His Tyr | 200 | 205 | 210 |
| Lys Cys Asp Ser | Pro Gly Met Cys Gly | Tyr Asp Leu Tyr Glu Asn | 215 | 220 | 225 |
| Asp Asn Ala Ala | Trp Asp Tyr Asp Asn | Gly Ile Tyr Ser Thr Gln | 230 | 235 | 240 |
| Met Tyr Thr Gln | Arg Val Gln Gln Ile | Leu Ala Ser His Asn Pro | 245 | 250 | 255 |
| Thr Lys Pro Ile | Phe Leu Tyr Thr Ala | Tyr Gln Ala Val His Ser | 260 | 265 | 270 |
| Pro Leu Gln Ala | Pro Gly Arg Tyr Phe | Glu His Tyr Arg Ser Ile | 275 | 280 | 285 |
| Ile Asn Ile Asn | Arg Arg Arg Tyr Ala | Ala Met Leu Ser Cys Leu | 290 | 295 | 300 |
| Asp Glu Ala Ile | Asn Asn Val Thr Leu | Ala Leu Lys Thr Tyr Gly | 305 | 310 | 315 |
| Phe Tyr Asn Asn | Ser Ile Ile Ile Tyr | Ser Ser Asp Asn Gly Gly | 320 | 325 | 330 |
| Gln Pro Thr Ala | Gly Gly Ser Asn Trp | Pro Leu Arg Gly Ser Lys | 335 | 340 | 345 |
| Gly Thr Tyr Trp | Glu Gly Gly Ile Arg | Ala Val Gly Phe Val His | 350 | 355 | 360 |
| Ser Pro Leu Leu | Lys Asn Lys Gly Thr | Val Cys Lys Glu Leu Val | 365 | 370 | 375 |
| His Ile Thr Asp | Trp Tyr Pro Thr Leu | Ile Ser Leu Ala Glu Gly | 380 | 385 | 390 |
| Gln Ile Asp Glu | Asp Ile Gln Leu Asp | Gly Tyr Asp Ile Trp Glu | 395 | 400 | 405 |
| Thr Ile Ser Glu | Gly Leu Arg Ser Pro | Arg Val Asp Ile Leu His | 410 | 415 | 420 |
| Asn Ile Asp Pro | Tyr Thr Pro Arg Gln | Lys Met Ala Pro Gly Gln | 425 | 430 | 435 |

Gln Ala Met Gly Ser Gly Thr Leu Gln Ser Ser Gln Pro Ser Glu  
440 445 450

Cys Ser Thr Gly Asn Cys Leu Gln Glu Ile Leu Ala Thr Ala Thr  
455 460 465

Gly Ser Pro Leu Ser Leu Ser Ala Thr Trp Asp Arg Thr Gly Gly  
470 475 480

Thr Met Asn Gly Ser Pro Cys Gln Leu Ala Lys Val Tyr Gly Phe  
485 490 495

Ser Thr Ser Gln Pro Thr His Met Arg Gly Trp Thr Tyr Leu Thr  
500 505 510

Gly Ile Gln Glu Ser  
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<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 115

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<210> 116

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 116

ctctctgagt gtacatctgt gtgg 24

<210> 117

<211> 53

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<220>

<221> unsure

<222> 33

<223> unknown base

<400> 117

gccaccctac ctcagaaact gaaggagggt ggntattcaa cgcatatggt 50

cgg 53

<210> 118

<211> 2260

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 2009, 2026, 2033, 2055, 2074, 2078, 2086

<223> unknown base

<400> 118

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gccttgcgct cccgctgctg ctctcctggg tggcaggtgg ttctgggaac 200  
gcggccagtg caaggcatca cgggttggtta gcatcgccac gtcagcctgg 250  
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gagtgcgtgg gaccaaaca atgcagatgc ttccaggat acaccgggaa 400  
aacctgcagt caagatgtga atgagtggtg aatgaaacc cgccatgcc 450  
aacacagatg tgtgaataca cacggaagct acaagtgctt ttgcctcagt 500  
ggccacatgc tcatgccaga tgctacgtgt gtgaactcta ggacatgtgc 550  
catgataaac tgtcagtaca gctgtgaaga cacagaagaa gggccacagt 600  
gcctgtgtcc atcctcagga ctccgcctgg ccccaaattg aagagactgt 650  
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tcgaactgca atatatcagt ggacgatatg actgtataga tataaatgaa 800  
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tccagaggcg ggaactctca tggaggtaaa aaagggaatg aagagaaatg 1150  
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 catagaggag cgaagcctgc gaggagatgt gtttttcctt aaggtgaatg 1250  
 aagcaggtga attcggcctg attctggtcc aaaggaaagc gctaacttcc 1300  
 aaactggaac ataaagattt aaatatctcg gttgactgca gcttcaatca 1350  
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 tgtaccaaca gaaatattat tgtaagatgc ctttcttgta taagatatgc 1950  
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 catttctaga aaatagaaaa aaaagcacag agaaatgttt aactgtttga 2150  
 ctcttatgat acttcttgga aactatgaca tcaaagatag acttttgcct 2200  
 aagtggctta gctgggtctt tcatagccaa acttgatat ttaattcttt 2250  
 gtaataataa 2260

<210> 119

<211> 338

<212> PRT

<213> Homo sapiens

<400> 119

Met Pro Leu Pro Trp Ser Leu Ala Leu Pro Leu Leu Leu Ser Trp

1

5

10

15

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Val | Ala | Gly | Gly | Phe | Gly | Asn | Ala | Ala | Ser | Ala | Arg | His | His | Gly |  | 20  | 25  | 30  |
| Leu | Leu | Ala | Ser | Ala | Arg | Gln | Pro | Gly | Val | Cys | His | Tyr | Gly | Thr |  | 35  | 40  | 45  |
| Lys | Leu | Ala | Cys | Cys | Tyr | Gly | Trp | Arg | Arg | Asn | Ser | Lys | Gly | Val |  | 50  | 55  | 60  |
| Cys | Glu | Ala | Thr | Cys | Glu | Pro | Gly | Cys | Lys | Phe | Gly | Glu | Cys | Val |  | 65  | 70  | 75  |
| Gly | Pro | Asn | Lys | Cys | Arg | Cys | Phe | Pro | Gly | Tyr | Thr | Gly | Lys | Thr |  | 80  | 85  | 90  |
| Cys | Ser | Gln | Asp | Val | Asn | Glu | Cys | Gly | Met | Lys | Pro | Arg | Pro | Cys |  | 95  | 100 | 105 |
| Gln | His | Arg | Cys | Val | Asn | Thr | His | Gly | Ser | Tyr | Lys | Cys | Phe | Cys |  | 110 | 115 | 120 |
| Leu | Ser | Gly | His | Met | Leu | Met | Pro | Asp | Ala | Thr | Cys | Val | Asn | Ser |  | 125 | 130 | 135 |
| Arg | Thr | Cys | Ala | Met | Ile | Asn | Cys | Gln | Tyr | Ser | Cys | Glu | Asp | Thr |  | 140 | 145 | 150 |
| Glu | Glu | Gly | Pro | Gln | Cys | Leu | Cys | Pro | Ser | Ser | Gly | Leu | Arg | Leu |  | 155 | 160 | 165 |
| Ala | Pro | Asn | Gly | Arg | Asp | Cys | Leu | Asp | Ile | Asp | Glu | Cys | Ala | Ser |  | 170 | 175 | 180 |
| Gly | Lys | Val | Ile | Cys | Pro | Tyr | Asn | Arg | Arg | Cys | Val | Asn | Thr | Phe |  | 185 | 190 | 195 |
| Gly | Ser | Tyr | Tyr | Cys | Lys | Cys | His | Ile | Gly | Phe | Glu | Leu | Gln | Tyr |  | 200 | 205 | 210 |
| Ile | Ser | Gly | Arg | Tyr | Asp | Cys | Ile | Asp | Ile | Asn | Glu | Cys | Thr | Met |  | 215 | 220 | 225 |
| Asp | Ser | His | Thr | Cys | Ser | His | His | Ala | Asn | Cys | Phe | Asn | Thr | Gln |  | 230 | 235 | 240 |
| Gly | Ser | Phe | Lys | Cys | Lys | Cys | Lys | Gln | Gly | Tyr | Lys | Gly | Asn | Gly |  | 245 | 250 | 255 |
| Leu | Arg | Cys | Ser | Ala | Ile | Pro | Glu | Asn | Ser | Val | Lys | Glu | Val | Leu |  | 260 | 265 | 270 |
| Arg | Ala | Pro | Gly | Thr | Ile | Lys | Asp | Arg | Ile | Lys | Lys | Leu | Leu | Ala |  | 275 | 280 | 285 |
| His | Lys | Asn | Ser | Met | Lys | Lys | Lys | Ala | Lys | Ile | Lys | Asn | Val | Thr |  | 290 | 295 | 300 |

Pro Glu Pro Thr Arg Thr Pro Thr Pro Lys Val Asn Leu Gln Pro  
 305 310 315

Phe Asn Tyr Glu Glu Ile Val Ser Arg Gly Gly Asn Ser His Gly  
 320 325 330

Gly Lys Lys Gly Asn Glu Glu Lys  
 335

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<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 120

cctcagtggc cacatgctca tg 22

<210> 121

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 121

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<210> 122

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 122

gataaactgt cagtacagct gtgaagacac agaagaaggg ccacagtgcc 50

<210> 123

<211> 1199

<212> DNA

<213> Homo sapiens

<400> 123

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 ggccgagtgg cagggacgac gcccagaatg ggagctgact gatatggtgg 150  
 tgtgggtgac tggagcctcg agtgggaattg gtgaggagct ggcttaccag 200  
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gctggaaagg gtgaaaagaa gatgcctaga gaatggcaat ttaaaagaaa 300  
aagatatact tgttttgccc cttgacctga ccgacactgg ttcccatgaa 350  
gcggtacca aagctgttct ccaggagttt ggtagaatcg acattctggt 400  
caacaatggt ggaatgtccc agcgttctct gtgcatggat accagcttgg 450  
atgtctacag aaagctaata gagcttaact acttagggac ggtgtccttg 500  
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tactgtgaat agcatcctgg gtatcatatc tgtacctctt tccattggat 600  
actgtgctag caagcatgct ctccggggtt tttttaatgg ccttcgaaca 650  
gaacttgcca catacccagg tataatagtt tctaacattt gcccaggacc 700  
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actaatttgt gattttactt ttaatagat atgactttgc ttccaacatg 1150  
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<210> 124

<211> 289

<212> PRT

<213> Homo sapiens

<400> 124

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Val | Trp | Val | Thr | Gly | Ala | Ser | Ser | Gly | Ile | Gly | Glu | Glu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     | 15  |     |
| Leu | Ala | Tyr | Gln | Leu | Ser | Lys | Leu | Gly | Val | Ser | Leu | Val | Leu | Ser |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     | 30  |     |
| Ala | Arg | Arg | Val | His | Glu | Leu | Glu | Arg | Val | Lys | Arg | Arg | Cys | Leu |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     | 45  |     |
| Glu | Asn | Gly | Asn | Leu | Lys | Glu | Lys | Asp | Ile | Leu | Val | Leu | Pro | Leu |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Leu | Thr | Asp | Thr | Gly | Ser | His | Glu | Ala | Ala | Thr | Lys | Ala | Val | 65  | 70  | 75  |
| Leu | Gln | Glu | Phe | Gly | Arg | Ile | Asp | Ile | Leu | Val | Asn | Asn | Gly | Gly | 80  | 85  | 90  |
| Met | Ser | Gln | Arg | Ser | Leu | Cys | Met | Asp | Thr | Ser | Leu | Asp | Val | Tyr | 95  | 100 | 105 |
| Arg | Lys | Leu | Ile | Glu | Leu | Asn | Tyr | Leu | Gly | Thr | Val | Ser | Leu | Thr | 110 | 115 | 120 |
| Lys | Cys | Val | Leu | Pro | His | Met | Ile | Glu | Arg | Lys | Gln | Gly | Lys | Ile | 125 | 130 | 135 |
| Val | Thr | Val | Asn | Ser | Ile | Leu | Gly | Ile | Ile | Ser | Val | Pro | Leu | Ser | 140 | 145 | 150 |
| Ile | Gly | Tyr | Cys | Ala | Ser | Lys | His | Ala | Leu | Arg | Gly | Phe | Phe | Asn | 155 | 160 | 165 |
| Gly | Leu | Arg | Thr | Glu | Leu | Ala | Thr | Tyr | Pro | Gly | Ile | Ile | Val | Ser | 170 | 175 | 180 |
| Asn | Ile | Cys | Pro | Gly | Pro | Val | Gln | Ser | Asn | Ile | Val | Glu | Asn | Ser | 185 | 190 | 195 |
| Leu | Ala | Gly | Glu | Val | Thr | Lys | Thr | Ile | Gly | Asn | Asn | Gly | Asp | Gln | 200 | 205 | 210 |
| Ser | His | Lys | Met | Thr | Thr | Ser | Arg | Cys | Val | Arg | Leu | Met | Leu | Ile | 215 | 220 | 225 |
| Ser | Met | Ala | Asn | Asp | Leu | Lys | Glu | Val | Trp | Ile | Ser | Glu | Gln | Pro | 230 | 235 | 240 |
| Phe | Leu | Leu | Val | Thr | Tyr | Leu | Trp | Gln | Tyr | Met | Pro | Thr | Trp | Ala | 245 | 250 | 255 |
| Trp | Trp | Ile | Thr | Asn | Lys | Met | Gly | Lys | Lys | Arg | Ile | Glu | Asn | Phe | 260 | 265 | 270 |
| Lys | Ser | Gly | Val | Asp | Ala | Asp | Ser | Ser | Tyr | Phe | Lys | Ile | Phe | Lys | 275 | 280 | 285 |

Thr Lys His Asp

<210> 125

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 125

gcaatgaact gggagctgc 19

<210> 126

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 126

ctgtgaatag catcctggg 19

<210> 127

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 127

cttttcaagc cactggaggg 20

<210> 128

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 128

ctgtagacat ccaagctggg atcc 24

<210> 129

<211> 23

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

<400> 129

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<210> 130

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 130

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<210> 131  
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<212> DNA  
<213> Homo sapiens

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caatcaatcc aacagcatat tcggttgcat cttctacaca ctacagctat 150  
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 aatggagcgt agggctgggg accagaccgg aggagtgggg cctgaagcag 1450  
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<210> 132

<211> 571

<212> PRT

<213> Homo sapiens

<400> 132

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Leu | Ser | Ser | Leu | Val | Ser | Leu | Ala | Gly | Ser | Val | Tyr | Leu |
| 1   |     |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Trp | Ile | Leu | Phe | Phe | Val | Leu | Tyr | Asp | Phe | Cys | Ile | Val | Cys |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |

Ile Thr Thr Tyr Ala Ile Asn Val Ser Leu Met Trp Leu Ser Phe  
 35 40 45  
 Arg Lys Val Gln Glu Pro Gln Gly Lys Ala Lys Arg His Gly Asn  
 50 55 60  
 Thr Val Pro Gly Glu Trp Pro Trp Gln Ala Ser Val Arg Arg Gln  
 65 70 75  
 Gly Ala His Ile Cys Ser Gly Ser Leu Val Ala Asp Thr Trp Val  
 80 85 90  
 Leu Thr Ala Ala His Cys Phe Glu Lys Ala Ala Ala Thr Glu Leu  
 95 100 105  
 Asn Ser Trp Ser Val Val Leu Gly Ser Leu Gln Arg Glu Gly Leu  
 110 115 120  
 Ser Pro Gly Ala Glu Glu Val Gly Val Ala Ala Leu Gln Leu Pro  
 125 130 135  
 Arg Ala Tyr Asn His Tyr Ser Gln Gly Ser Asp Leu Ala Leu Leu  
 140 145 150  
 Gln Leu Ala His Pro Thr Thr His Thr Pro Leu Cys Leu Pro Gln  
 155 160 165  
 Pro Ala His Arg Phe Pro Phe Gly Ala Ser Cys Trp Ala Thr Gly  
 170 175 180  
 Trp Asp Gln Asp Thr Ser Asp Ala Pro Gly Thr Leu Arg Asn Leu  
 185 190 195  
 Arg Leu Arg Leu Ile Ser Arg Pro Thr Cys Asn Cys Ile Tyr Asn  
 200 205 210  
 Gln Leu His Gln Arg His Leu Ser Asn Pro Ala Arg Pro Gly Met  
 215 220 225  
 Leu Cys Gly Gly Pro Gln Pro Gly Val Gln Gly Pro Cys Gln Gly  
 230 235 240  
 Asp Ser Gly Gly Pro Val Leu Cys Leu Glu Pro Asp Gly His Trp  
 245 250 255  
 Val Gln Ala Gly Ile Ile Ser Phe Ala Ser Ser Cys Ala Gln Glu  
 260 265 270  
 Asp Ala Pro Val Leu Leu Thr Asn Thr Ala Ala His Ser Ser Trp  
 275 280 285  
 Leu Gln Ala Arg Val Gln Gly Ala Ala Phe Leu Ala Gln Ser Pro  
 290 295 300  
 Glu Thr Pro Glu Met Ser Asp Glu Asp Ser Cys Val Ala Cys Gly  
 305 310 315

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Leu | Arg | Thr | Ala | Gly | Pro | Gln | Ala | Gly | Ala | Pro | Ser | Pro | Trp | 320 | 325 | 330 |
| Pro | Trp | Glu | Ala | Arg | Leu | Met | His | Gln | Gly | Gln | Leu | Ala | Cys | Gly | 335 | 340 | 345 |
| Gly | Ala | Leu | Val | Ser | Glu | Glu | Ala | Val | Leu | Thr | Ala | Ala | His | Cys | 350 | 355 | 360 |
| Phe | Ile | Gly | Arg | Gln | Ala | Pro | Glu | Glu | Trp | Ser | Val | Gly | Leu | Gly | 365 | 370 | 375 |
| Thr | Arg | Pro | Glu | Glu | Trp | Gly | Leu | Lys | Gln | Leu | Ile | Leu | His | Gly | 380 | 385 | 390 |
| Ala | Tyr | Thr | His | Pro | Glu | Gly | Gly | Tyr | Asp | Met | Ala | Leu | Leu | Leu | 395 | 400 | 405 |
| Leu | Ala | Gln | Pro | Val | Thr | Leu | Gly | Ala | Ser | Leu | Arg | Pro | Leu | Cys | 410 | 415 | 420 |
| Leu | Pro | Tyr | Pro | Asp | His | His | Leu | Pro | Asp | Gly | Glu | Arg | Gly | Trp | 425 | 430 | 435 |
| Val | Leu | Gly | Arg | Ala | Arg | Pro | Gly | Ala | Gly | Ile | Ser | Ser | Leu | Gln | 440 | 445 | 450 |
| Thr | Val | Pro | Val | Thr | Leu | Leu | Gly | Pro | Arg | Ala | Cys | Ser | Arg | Leu | 455 | 460 | 465 |
| His | Ala | Ala | Pro | Gly | Gly | Asp | Gly | Ser | Pro | Ile | Leu | Pro | Gly | Met | 470 | 475 | 480 |
| Val | Cys | Thr | Ser | Ala | Val | Gly | Glu | Leu | Pro | Ser | Cys | Glu | Gly | Leu | 485 | 490 | 495 |
| Ser | Gly | Ala | Pro | Leu | Val | His | Glu | Val | Arg | Gly | Thr | Trp | Phe | Leu | 500 | 505 | 510 |
| Ala | Gly | Leu | His | Ser | Phe | Gly | Asp | Ala | Cys | Gln | Gly | Pro | Ala | Arg | 515 | 520 | 525 |
| Pro | Ala | Val | Phe | Thr | Ala | Leu | Pro | Ala | Tyr | Glu | Asp | Trp | Val | Ser | 530 | 535 | 540 |
| Ser | Leu | Asp | Trp | Gln | Val | Tyr | Phe | Ala | Glu | Glu | Pro | Glu | Pro | Glu | 545 | 550 | 555 |
| Ala | Glu | Pro | Gly | Ser | Cys | Leu | Ala | Asn | Ile | Ser | Gln | Pro | Thr | Ser | 560 | 565 | 570 |

Cys

<210> 133

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 133

cctgtgctgt gcctcgagcc tgac 24

<210> 134

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 134

gtgggcagca gttagcaccg cctc 24

<210> 135

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 135

ggctggcatc atcagctttg catcaagctg tgcccaggag gacgc 45

<210> 136

<211> 1998

<212> DNA

<213> Homo sapiens

<400> 136

cgggccgccc cgggccccca ttcgggccgg gcctcgctgc ggcggcgact 50  
gagccaggct gggccgcgtc cctgagtccc agagtcggcg cggcgcggca 100  
ggggcagcct tccaccacgg ggagcccagc tgtcagcgc ctcacaggaa 150  
gatgctgcgt cggcggggca gccctggcat ggggtgtcat gtgggtgcag 200  
ccctgggagc actgtggttc tgcctcacag gagccctgga ggtccaggtc 250  
cctgaagacc cagtgggtggc actggtgggc accgatgcca ccctgtgctg 300  
ctccttctcc cctgagcctg gcttcagcct ggcacagctc aacctcatct 350  
ggcagctgac agatacaaaa cagctggtgc acagctttgc tgagggccag 400  
gaccagggca gcgcctatgc caaccgcacg gccctcttcc cggacctgct 450  
ggcacagggc aacgcatccc tgaggctgca gcgcgtgctg gtggcggacg 500  
agggcagctt cacctgcttc gtgagcatcc gggatttcgg cagcgctgcc 550



gtcagcctgc aggtggccgc tccctactcg aagcccagca tgaccctgga 600  
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gctaccaggg ctaccctgag gctgaggtgt tctggcagga tgggcaggg 700  
gtgcccctga ctggcaacgt gaccacgtcg cagatggcca acgagcaggg 750  
cttgtttgat gtgcacagcg tcttgcgggt ggtgctgggt gcgaatggca 800  
cctacagctg cctggtgcgc aaccccgctg tgcagcagga tgcgcacrgc 850  
tctgtcacca tcacagggca gcctatgaca ttccccccag aggcctgtg 900  
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ggagctgagg accaggatgg ggaggagaa ggctccaaga cagccctgca 1050  
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gaccatgagg accagggagc tgctaccctt ccctacagct cctaccctct 1150  
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ctctgacagg tgggctcctt ctccaaagga tgcgatacac agaccactgt 1250  
gcagccttat ttctccaatg gacatgattc ccaagtcac ctgctgcctt 1300  
ttttcttata gacacaatga acagaccacc cacaacctta gttctctaag 1350  
tcatectgcc tgctgcctta tttcacagta catacatttc ttagggacac 1400  
agtacactga ccacatcacc accctcttct tccagtgtg cgtggaccat 1450  
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tccaatggcc gtgatacact agtgatcatg ttcagccctg cttccacctg 1600  
catagaatct tttcttctca gacagggaca gtgcggcctc aacatctcct 1650  
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agacagggca gggccaggaa tgctttgggg acaccgaggg gactgcccc 1750  
caccaccacc atggtgctat tctggggctg gggcagtctt ttcctggctt 1800  
gcctctggcc agtcctggc ctctggtaga gtgagacttc agacgttctg 1850  
atgccttccg gatgtcatct ctccctgccc caggaatgga agatgtgagg 1900  
acttctaatt taaatgtggg actcggaggg attttgtaaa ctgggggtat 1950

atattgggga aaataaatgt ctttgtaaaa aaaaaaaaaa aaaaaaaaa 1998

<210> 137  
<211> 316  
<212> PRT  
<213> Homo sapiens

<220>  
<221> unsure  
<222> 233  
<223> unknown amino acid

<400> 137  
Met Leu Arg Arg Gly Ser Pro Gly Met Gly Val His Val Gly 15  
1 5 10  
Ala Ala Leu Gly Ala Leu Trp Phe Cys Leu Thr Gly Ala Leu Glu 30  
20 25  
Val Gln Val Pro Glu Asp Pro Val Val Ala Leu Val Gly Thr Asp 45  
35 40  
Ala Thr Leu Cys Cys Ser Phe Ser Pro Glu Pro Gly Phe Ser Leu 60  
50 55  
Ala Gln Leu Asn Leu Ile Trp Gln Leu Thr Asp Thr Lys Gln Leu 75  
65 70  
Val His Ser Phe Ala Glu Gly Gln Asp Gln Gly Ser Ala Tyr Ala 90  
80 85  
Asn Arg Thr Ala Leu Phe Pro Asp Leu Leu Ala Gln Gly Asn Ala 105  
95 100  
Ser Leu Arg Leu Gln Arg Val Arg Val Ala Asp Glu Gly Ser Phe 120  
110 115  
Thr Cys Phe Val Ser Ile Arg Asp Phe Gly Ser Ala Ala Val Ser 135  
125 130  
Leu Gln Val Ala Ala Pro Tyr Ser Lys Pro Ser Met Thr Leu Glu 150  
140 145  
Pro Asn Lys Asp Leu Arg Pro Gly Asp Thr Val Thr Ile Thr Cys 165  
155 160  
Ser Ser Tyr Gln Gly Tyr Pro Glu Ala Glu Val Phe Trp Gln Asp 180  
170 175  
Gly Gln Gly Val Pro Leu Thr Gly Asn Val Thr Thr Ser Gln Met 195  
185 190  
Ala Asn Glu Gln Gly Leu Phe Asp Val His Ser Val Leu Arg Val 210  
200 205  
Val Leu Gly Ala Asn Gly Thr Tyr Ser Cys Leu Val Arg Asn Pro 225  
215 220

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Leu | Gln | Gln | Asp | Ala | His | Xaa | Ser | Val | Thr | Ile | Thr | Gly | Gln | 240 |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     |     |     |
| Pro | Met | Thr | Phe | Pro | Pro | Glu | Ala | Leu | Trp | Val | Thr | Val | Gly | Leu | 255 |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     |     |     |
| Ser | Val | Cys | Leu | Ile | Ala | Leu | Leu | Val | Ala | Leu | Ala | Phe | Val | Cys | 270 |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     |     |     |
| Trp | Arg | Lys | Ile | Lys | Gln | Ser | Cys | Glu | Glu | Glu | Asn | Ala | Gly | Ala | 285 |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     |     |     |
| Glu | Asp | Gln | Asp | Gly | Glu | Gly | Glu | Gly | Ser | Lys | Thr | Ala | Leu | Gln | 300 |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     |     |     |
| Pro | Leu | Lys | His | Ser | Asp | Ser | Lys | Glu | Asp | Asp | Gly | Gln | Glu | Ile | 315 |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     |     |     |

Ala

<210> 138  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 138  
 ctggcacagc tcaacctcat ctgg 24

<210> 139  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 139  
 gctgtctgtc tgtctcattg 20

<210> 140  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 140  
 ggacacagta tactgaccac 20

<210> 141  
 <211> 24

<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 141  
tgcgaaccag gcagctgtaa gtgc 24

<210> 142  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 142  
tggaagaaga ggggtggtgat gtgg 24

<210> 143  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 143  
cagctgacag acaccaaaca gctggtgcac agtttcaccg aaggc 45

<210> 144  
<211> 2336  
<212> DNA  
<213> Homo sapiens

<220>  
<221> unsure  
<222> 1620, 1673  
<223> unknown base

<400> 144  
ttcgtgaccc ttgagaaaag agttggtggt aaatgtgcca cgtcttctaa 50  
gaagggggag tcctgaactt gtctgaagcc cttgtccgta agccttgaac 100  
tacgttctta aatctatgaa gtcgaggag ctttcgctgc tttttagagg 150  
acttctttcc ttgcttcagc aacatgaggc ttttcttggtg gaacgcggtc 200  
ttgactctgt tcgtcacttc tttgattggg gctttgatcc ctgaaccaga 250  
agtgaaaatt gaagttctcc agaagccatt catctgccat cgcaagacca 300  
aaggagggga tttgatgttg gtccactatg aaggctactt agaaaaggac 350  
ggctccttat ttcactccac tcacaaacat aacaatggtc agcccatttg 400

gtttaccctg ggcacacctg aggtctctcaa aggttgggac cagggcttga 450  
aaggaatgtg ttaggagag aagagaaagc tcattctcc tctgctctg 500  
ggctatggaa aagaaggaaa aggtaaaatt ccccgagaa gtacactgat 550  
atttaatat gatctcctgg agattcgaaa tggaccaaga tcccatgaat 600  
cattccaaga aatggatctt aatgatgact ggaaactctc taaagatgag 650  
gttaaagcat atttaaagaa ggagtttgaa aaacatggtg cgggtgtgaa 700  
tgaaagtcat catgatgctt tgggtggagga tttttttgat aaagaagatg 750  
aagacaaaga tgggtttata tctgccagag aatttacata taaacacgat 800  
gagttataga gatacatcta cctttttaat atagcactca tctttcaaga 850  
gagggcagtc atctttaaag aacattttat tttatacaa tgttctttct 900  
tgctttgttt tttattttta tatatttttt ctgactccta tttaaagaac 950  
cccttaggtt tctaagtacc cttttcttc tgataagtta ttgggaagaa 1000  
aaagctaatt ggtctttgaa tagaagactt ctggacaatt tttcactttc 1050  
acagatatga agctttgttt tactttctca cttataaatt taaaatgttg 1100  
caactgggaa tataccacga catgagacca gggtatagca caaattagca 1150  
ccctatattt ctgcttccct ctattttctc caagttagag gtcaacattt 1200  
gaaaagcctt ttgcaatagc ccaaggcttg ctattttcat gttataatga 1250  
aatagtttat gtgtaactgg ctctgagtct ctgcttgagg accagaggaa 1300  
aatggttgtt ggacctgact tgttaatggc tactgcttta ctaaggagat 1350  
gtgcaatgct gaagttagaa acaagggtta tagccaggca tgggtggctca 1400  
tgctgtaat ccagcactt tgggaggctg aggcgggagg atcacctgag 1450  
gttgggagtt cgagaccagc ctgaccaaca cggagaaacc ctatctctac 1500  
taaaaataca aagtagcccg gcgtggtgat gcgtgcctgt aatcccagct 1550  
accaggaag gctgaggcgg cagaatcact tgaaccgag gccgaggttg 1600  
cggtaagccg agatcacctn cagcctggac actctgtctc gaaaaaagaa 1650  
aagaacacgg ttaataccat atnaatatgt atgcattgag acatgctacc 1700  
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tcaatatgtt atagatgagg tagaaagtta tatttatatt caatatattac 1850  
 ttcttaaggc tagcggaata tccttcctgg ttctttaatg ggtagtctat 1900  
 agtatattat actacaataa cattgtatca taagataaag tagtaaacca 1950  
 gtctacattt tcccatttct gtctcatcaa aaactgaagt tagctgggtg 2000  
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 tagtcccagc tactcgggag gctgagacag gagatttgct tgaacccggg 2200  
 aggcggaggt tgcagtgagc caagattgtg ccactgcact ccagcctggg 2250  
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 gcagctacta ttgaataaat acctatcctg gatttt 2336

<210> 145

<211> 211

<212> PRT

<213> Homo sapiens

<400> 145

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Leu | Phe | Leu | Trp | Asn | Ala | Val | Leu | Thr | Leu | Phe | Val | Thr |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |
| Ser | Leu | Ile | Gly | Ala | Leu | Ile | Pro | Glu | Pro | Glu | Val | Lys | Ile | Glu |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |
| Val | Leu | Gln | Lys | Pro | Phe | Ile | Cys | His | Arg | Lys | Thr | Lys | Gly | Gly |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |
| Asp | Leu | Met | Leu | Val | His | Tyr | Glu | Gly | Tyr | Leu | Glu | Lys | Asp | Gly |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |
| Ser | Leu | Phe | His | Ser | Thr | His | Lys | His | Asn | Asn | Gly | Gln | Pro | Ile |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |
| Trp | Phe | Thr | Leu | Gly | Ile | Leu | Glu | Ala | Leu | Lys | Gly | Trp | Asp | Gln |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |
| Gly | Leu | Lys | Gly | Met | Cys | Val | Gly | Glu | Lys | Arg | Lys | Leu | Ile | Ile |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |
| Pro | Pro | Ala | Leu | Gly | Tyr | Gly | Lys | Glu | Gly | Lys | Gly | Lys | Ile | Pro |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |
| Pro | Glu | Ser | Thr | Leu | Ile | Phe | Asn | Ile | Asp | Leu | Leu | Glu | Ile | Arg |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |
| Asn | Gly | Pro | Arg | Ser | His | Glu | Ser | Phe | Gln | Glu | Met | Asp | Leu | Asn |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |

Asp Asp Trp Lys Leu Ser Lys Asp Glu Val Lys Ala Tyr Leu Lys  
155 160 165

Lys Glu Phe Glu Lys His Gly Ala Val Val Asn Glu Ser His His  
170 175 180

Asp Ala Leu Val Glu Asp Ile Phe Asp Lys Glu Asp Glu Asp Lys  
185 190 195

Asp Gly Phe Ile Ser Ala Arg Glu Phe Thr Tyr Lys His Asp Glu  
200 205 210

Leu

<210> 146

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 146

ctttccttgc ttcagcaaca tgaggc 26

<210> 147

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 147

gcccagagca ggaggaatga tgagc 25

<210> 148

<211> 49

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 148

gtggaacgcg gtcttgactc tgttcgtcac ttctttgatt ggggctttg 49

<210> 149

<211> 2196

<212> DNA

<213> Homo sapiens

<400> 149

aataaagctt ccttaatgtt gtatatgtct ttgaagtaca tccgtgcatt 50

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caccctctcc cgtagccac ccgactaaca tctcagtctc tgaaaatgca 150  
cagagatgcc tggctacctc gccctgcctt cagcctcacg gggctcagtc 200  
tctttttctc tttggtgccca ccaggacgga gcatggaggt cacagtacct 250  
gccaccctca acgtcctcaa tggctctgac gcccgctgc cctgcacctt 300  
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aaaaaagagc agaagctgag cacagatgac ctgaagaccg aggaggagg 750  
caagacggac ggtgaaggca acccgatga tggcgccaag tagtgggtg 800  
ccggccctgc agcctccgt gtcccgctc ctcctctc cgcctgtac 850  
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caccaagagt gaccactct ctccatccg agaaacctgc catgctctg 1000  
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acggaaagcc agggctgcag gcaaagctg acatgtgcc tggccagga 1400  
ggccatgttg ggccctcgtt tccattgcta gtggcctcct tggggctcct 1450  
gttggtcct aatcccttag gactgtggat gaggccagac tggaagagca 1500



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caggggcagc caaggtctgg aaatgaggag gccatgcaca ggggtgggca 1700  
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ttccacctgg cttttggcta cagagaggga agggaaagcc tgaggccggc 1800  
ataaggggag gccttggaac ctgagctgcc aatgccagcc ctgtcccatc 1850  
tgcggccacg ctactcgctc ctctcccaac aactcccttc gtggggacaa 1900  
aagtgacaat tgtaggccag gcacagtggc tcacgcctgt aatcccagca 1950  
ctttgggagg ccaaggcggg tggattacct ccatctgttt agtagaaatg 2000  
ggcaaaaccc catctctact aaaaatacaa gaattagctg ggcgtggtgg 2050  
cgtgtgcctg taatccagc tatttgggag gctgaggcag gagaatcgct 2100  
tgagcccggg aagcagaggt tgcagtgaac tgagatagt atagtccac 2150  
tgcaattcag cctgggtgac atagagagac tccatctcaa aaaaaa 2196

<210> 150

<211> 215

<212> PRT

<213> Homo sapiens

<400> 150

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | His | Arg | Asp | Ala | Trp | Leu | Pro | Arg | Pro | Ala | Phe | Ser | Leu | Thr |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |
| Gly | Leu | Ser | Leu | Phe | Phe | Ser | Leu | Val | Pro | Pro | Gly | Arg | Ser | Met |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |
| Glu | Val | Thr | Val | Pro | Ala | Thr | Leu | Asn | Val | Leu | Asn | Gly | Ser | Asp |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |
| Ala | Arg | Leu | Pro | Cys | Thr | Phe | Asn | Ser | Cys | Tyr | Thr | Val | Asn | His |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |
| Lys | Gln | Phe | Ser | Leu | Asn | Trp | Thr | Tyr | Gln | Glu | Cys | Asn | Asn | Cys |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |
| Ser | Glu | Glu | Met | Phe | Leu | Gln | Phe | Arg | Met | Lys | Ile | Ile | Asn | Leu |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |
| Lys | Leu | Glu | Arg | Phe | Gln | Asp | Arg | Val | Glu | Phe | Ser | Gly | Asn | Pro |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |
| Ser | Lys | Tyr | Asp | Val | Ser | Val | Met | Leu | Arg | Asn | Val | Gln | Pro | Glu |

|   |     |     |     |
|---|-----|-----|-----|
|   | 110 | 115 | 120 |
| Asp Glu Gly Ile Tyr Asn Cys Tyr Ile Met Asn Pro Pro Asp Arg |     |     |     |
|   | 125 | 130 | 135 |
| His Arg Gly His Gly Lys Ile His Leu Gln Val Leu Met Glu Glu |     |     |     |
|   | 140 | 145 | 150 |
| Pro Pro Glu Arg Asp Ser Thr Val Ala Val Ile Val Gly Ala Ser |     |     |     |
|   | 155 | 160 | 165 |
| Val Gly Gly Phe Leu Ala Val Val Ile Leu Val Leu Met Val Val |     |     |     |
|   | 170 | 175 | 180 |
| Lys Cys Val Arg Arg Lys Lys Glu Gln Lys Leu Ser Thr Asp Asp |     |     |     |
|   | 185 | 190 | 195 |
| Leu Lys Thr Glu Glu Glu Gly Lys Thr Asp Gly Glu Gly Asn Pro |     |     |     |
|   | 200 | 205 | 210 |
| Asp Asp Gly Ala Lys   |     |     |     |
|   | 215 |     |     |

<210> 151  
 <211> 524  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> 103, 233  
 <223> unknown base

<400> 151  
 gttgtatatg tcctgaagta catccgtgca ttttttttag catccaacca 50  
 tcctcccttg tagttctcgc ccctcaaat caccttctcc cttagcccac 100  
 ccnactaaca tctcagtctc tgaaaatgca cagagatgcc tggctacctc 150  
 gccctgcctt cagcctcacg gggctcagtc tctttttctc tttggtgcc 200  
 ccaggacgga gcatggaggt ccacagtacc tgnccaccct caacgtcctc 250  
 aatggctctg acgcccgcct gccctgcct tcaactcctg ctacacagt 300  
 aaccacaaac agttctccct gaactggact taccaggagt gcaacaactg 350  
 ctctgaggag atgttctctc agttccgcat gaagatcatt aacctgaagc 400  
 tggagcgggt tcaagaccgc gtggagttct cagggaaccc cagcaagtac 450  
 gatgtgtcgg tgatgctgag aaacgtgcag ccggaggatg aggggattta 500  
 caactgctac atcatgaacc cccc 524

<210> 152

<211> 368  
<212> DNA  
<213> Homo sapiens

<220>  
<221> unsure  
<222> 56, 123  
<223> unknown base

<400> 152  
tcacggggct catctctttt tctctttggt gcccaccagg acggagcatg 50  
gaggtncaca tacctgccac cctcaacgtc ctcaatggct ttgacgcccg 100  
cctgccctgc accttcaact ccngctacac agtgaaccac aaacagttct 150  
ccctgaactg gatttaccag gagtgcaaca actggctctg aggagatgtt 200  
cctccagttc ccgcatggaa gatcatttaa cctgaaagct ggaagcgggt 250  
ttcaagaacc gcgtggaagt ttctcaggga accccagcaa gtacgatgtg 300  
tcggtgatgc tgagaaacgt gcagccggag gatgagggga tttacaactg 350  
ctacatcatg aaccccc 368

<210> 153  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 153  
acggagcatg gaggtccaca gtac 24

<210> 154  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 154  
gcacgtttct cagcatcacc gac 23

<210> 155  
<211> 50  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 155

cgccctgccct gcaccttcaa ctctgctac acagtgaacc acaaacagtt 50  
 <210> 156  
 <211> 2680  
 <212> DNA  
 <213> Homo sapiens  
 <400> 156  
 tgcggcgacc gtcgtacacc atgggcctcc acctccgccc ctaccgtgtg 50  
 gggctgctcc cggatggcct cctgttcctc ttgctgctgc taatgctgct 100  
 cgcggaccca ggcctcccgg cggacgtca cccccagtg gtgctggtcc 150  
 ctggtgattt gggtaaccaa ctggaagcca agctggacaa gccgacagt 200  
 gtgcactacc tctgctccaa gaagaccgaa agctacttca caatctggct 250  
 gaacctggaa ctgctgctgc ctgtcatcat tgactgctgg attgacaata 300  
 tcaggctggt ttacaacaaa acatccaggg ccaccagtt tcctgatggt 350  
 gtggatgtac gtgtccctgg ctttggaag accttctcac tggagttcct 400  
 ggaccccagc aaaagcagcg tgggttccta tttccacacc atggtggaga 450  
 gccttgtggg ctggggctac acacggggtg aggatgtccg aggggctccc 500  
 tatgactggc gccgagcccc aaatgaaaac gggccctact tcctggccct 550  
 ccgcgagatg atcgaggaga tgtaccagct gtatgggggc ccctggtgc 600  
 tggttgcca cagtatgggc aacatgtaca cgctctactt tctgcagcg 650  
 cagccgcagg cctggaagga caagtatatc cgggccttcg tgtcactggg 700  
 tgcgccctgg gggggcgtgg ccaagacct gcgcgtcctg gcttcaggag 750  
 acaacaaccg gatcccagtc atcgggcccc tgaagatccg ggagcagcag 800  
 cggtcagctg tctccaccag ctggctgctg ccctacaact acacatggtc 850  
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 actaccgcaa gttcttccag gacatcggct ttgaagatgg ctggctcatg 950  
 cggcaggaca cagaagggt ggtggaagcc acgatgccac ctggcgtgca 1000  
 gctgcactgc ctctatggtg ctggcgctcc cacaccagac tccttctact 1050  
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 ggtactgtga acttgaagag tgccctgcag tgccaggcct ggcagagccg 1150  
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aagtgcgtgt tggtatcctt tctctgtggc agtgaagaag gaagaaatga 1450  
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ccccagtc cgcaggtgt gttccagggg ccctgatttc ctcgatgtg 2000  
ctattggccc caggactgaa gctgcctccc ttcacctgg gactgtggtt 2050  
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actagtacca agtgggtcag cacagggctg aggatggggc tcctatccac 2250  
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ttgcatacat gcctggcatc tgtctccctt tggtcctgag tggccccaca 2600  
tggggctctg agcaggctgt atctggattc tggcaataaa agtactctgg 2650

atgctgtataa aaaaaaaaaa aaaaaaaaaa 2680

<210> 157  
<211> 412  
<212> PRT  
<213> Homo Sapien

<400> 157  
Met Gly Leu His Leu Arg Pro Tyr Arg Val Gly Leu Leu Pro Asp 15  
1 5 10  
Gly Leu Leu Phe Leu Leu Leu Leu Leu Met Leu Leu Ala Asp Pro 30  
20 25  
Ala Leu Pro Ala Gly Arg His Pro Pro Val Val Leu Val Pro Gly 45  
35 40  
Asp Leu Gly Asn Gln Leu Glu Ala Lys Leu Asp Lys Pro Thr Val 60  
50 55  
Val His Tyr Leu Cys Ser Lys Lys Thr Glu Ser Tyr Phe Thr Ile 75  
65 70  
Trp Leu Asn Leu Glu Leu Leu Leu Pro Val Ile Ile Asp Cys Trp 90  
80 85  
Ile Asp Asn Ile Arg Leu Val Tyr Asn Lys Thr Ser Arg Ala Thr 105  
95 100  
Gln Phe Pro Asp Gly Val Asp Val Arg Val Pro Gly Phe Gly Lys 120  
110 115  
Thr Phe Ser Leu Glu Phe Leu Asp Pro Ser Lys Ser Ser Val Gly 135  
125 130  
Ser Tyr Phe His Thr Met Val Glu Ser Leu Val Gly Trp Gly Tyr 150  
140 145  
Thr Arg Gly Glu Asp Val Arg Gly Ala Pro Tyr Asp Trp Arg Arg 165  
155 160  
Ala Pro Asn Glu Asn Gly Pro Tyr Phe Leu Ala Leu Arg Glu Met 180  
170 175  
Ile Glu Glu Met Tyr Gln Leu Tyr Gly Gly Pro Val Val Leu Val 195  
185 190  
Ala His Ser Met Gly Asn Met Tyr Thr Leu Tyr Phe Leu Gln Arg 210  
200 205  
Gln Pro Gln Ala Trp Lys Asp Lys Tyr Ile Arg Ala Phe Val Ser 225  
215 220  
Leu Gly Ala Pro Trp Gly Gly Val Ala Lys Thr Leu Arg Val Leu 240  
230 235  
Ala Ser Gly Asp Asn Asn Arg Ile Pro Val Ile Gly Pro Leu Lys

|   | 245 | 250 | 255 |
|---|-----|-----|-----|
| Ile Arg Glu Gln Gln Arg Ser Ala Val Ser Thr Ser Trp Leu Leu | 260 | 265 | 270 |
| Pro Tyr Asn Tyr Thr Trp Ser Pro Glu Lys Val Phe Val Gln Thr | 275 | 280 | 285 |
| Pro Thr Ile Asn Tyr Thr Leu Arg Asp Tyr Arg Lys Phe Phe Gln | 290 | 295 | 300 |
| Asp Ile Gly Phe Glu Asp Gly Trp Leu Met Arg Gln Asp Thr Glu | 305 | 310 | 315 |
| Gly Leu Val Glu Ala Thr Met Pro Pro Gly Val Gln Leu His Cys | 320 | 325 | 330 |
| Leu Tyr Gly Thr Gly Val Pro Thr Pro Asp Ser Phe Tyr Tyr Glu | 335 | 340 | 345 |
| Ser Phe Pro Asp Arg Asp Pro Lys Ile Cys Phe Gly Asp Gly Asp | 350 | 355 | 360 |
| Gly Thr Val Asn Leu Lys Ser Ala Leu Gln Cys Gln Ala Trp Gln | 365 | 370 | 375 |
| Ser Arg Gln Glu His Gln Val Leu Leu Gln Glu Leu Pro Gly Ser | 380 | 385 | 390 |
| Glu His Ile Glu Met Leu Ala Asn Ala Thr Thr Leu Ala Tyr Leu | 395 | 400 | 405 |
| Lys Arg Val Leu Leu Gly Pro                                 | 410 |     |     |

<210> 158

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 158

ctggggctac acacggggtg agg 23

<210> 159

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 159

ggtgccgctg cagaaagtag agcg 24

<210> 160  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 160  
gccccaaatg aaaacgggcc ctacttcctg gccctccgcg agatg 45

<210> 161  
<211> 1512  
<212> DNA  
<213> Homo sapiens

<400> 161  
cggacgcgtg ggcggacgcg tggggcggcg gcagcggcg cgacggcgac 50  
atggagagcg gggcctacgg cgcgccaag gcggggcgct ccttcgacct 100  
gcggcgcttc ctgacgcagc cgcaggtggt ggcgcgcgcc gtgtgcttgg 150  
tcttcgcctt gatcgtgttc tcctgcctct atggtgaggg ctacagcaat 200  
gccacgagt ctaagcagat gtactgcgtg ttcaaccgca acgaggatgc 250  
ctgccgctat ggcagtgcc tgggggtgct ggccttcctg gcctcggcct 300  
tcttcttggg ggtcgcgcg tatttcccc agatcagcaa cgccactgac 350  
cgcaagtacc tggtcattgg tgacctgctc ttctcagctc tctggacctt 400  
cctgtggttt gttggtttct gcttcctcac caaccagtgg gcagtcacca 450  
acccgaagga cgtgctggtg ggggccgact ctgtgagggc agccatcacc 500  
ttcagcttct tttccatctt ctctgggggt gtgctggcct cctgggccta 550  
ccagcgctac aaggctggcg tggacgactt catccagaat tacgttgacc 600  
ccactccgga ccccaacact gcctacgcct cctaccaggg tgcattctgtg 650  
gacaactacc aacagccacc cttcaccag aacgcggaga ccaccgaggg 700  
ctaccagccg cccctgtgt actgagtggc ggtagcgtg ggaaggggga 750  
cagagagggc cctcccctct gccctggact ttcccatcag cctcctggaa 800  
ctgccagccc ctctctttca cctgttccat cctgtgcagc tgacacacag 850  
ctaaggagcc tcatagcctg gcgggggctg gcagagccac accccaagtg 900  
cctgtgccca gagggcttca gtcagccgct cactcctcca gggcactttt 950  
aggaaagggg ttttagctag tgtttttcct cgcttttaat gacctcagcc 1000



ccgcctgcag tggctagaag ccagcaggtg cccatgtgct actgacaagt 1050  
 gcctcagctt ccccccgccc cggttcaggc cgtgggagcc gctattatct 1100  
 gcgttctctg ccaaagactc gtgggggcca tcacacctgc cctgtgcagc 1150  
 ggagccggac caggctcttg tgcctcact caggtttgct tcccctgtgc 1200  
 ccactgctgt atgatctggg ggccaccacc ctgtgccggg ggcctctggg 1250  
 ctgcctcccg tgggtgtgagg gcggggctgg tgctcatggc acttcctcct 1300  
 tgctcccacc cctggcagca ggaagggtt ttgcctgaca acaccagct 1350  
 ttatgtaaatt attctgcagt tgttacttag gaagcctggg gagggcaggg 1400  
 gtgccccatg gctcccagac tctgtctgtg ccgagtgtat tataaaatcg 1450  
 tgggggagat gcccggcctg ggatgctgtt tggagacgga ataaatgttt 1500  
 tctcattcaa ag 1512

<210> 162

<211> 224

<212> PRT

<213> Homo sapiens

<400> 162

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Glu | Ser | Gly | Ala | Tyr | Gly | Ala | Ala | Lys | Ala | Gly | Gly | Ser | Phe | 1   | 5   | 10  | 15 |
| Asp | Leu | Arg | Arg | Phe | Leu | Thr | Gln | Pro | Gln | Val | Val | Ala | Arg | Ala | 20  | 25  | 30  |    |
| Val | Cys | Leu | Val | Phe | Ala | Leu | Ile | Val | Phe | Ser | Cys | Ile | Tyr | Gly | 35  | 40  | 45  |    |
| Glu | Gly | Tyr | Ser | Asn | Ala | His | Glu | Ser | Lys | Gln | Met | Tyr | Cys | Val | 50  | 55  | 60  |    |
| Phe | Asn | Arg | Asn | Glu | Asp | Ala | Cys | Arg | Tyr | Gly | Ser | Ala | Ile | Gly | 65  | 70  | 75  |    |
| Val | Leu | Ala | Phe | Leu | Ala | Ser | Ala | Phe | Phe | Leu | Val | Val | Asp | Ala | 80  | 85  | 90  |    |
| Tyr | Phe | Pro | Gln | Ile | Ser | Asn | Ala | Thr | Asp | Arg | Lys | Tyr | Leu | Val | 95  | 100 | 105 |    |
| Ile | Gly | Asp | Leu | Leu | Phe | Ser | Ala | Leu | Trp | Thr | Phe | Leu | Trp | Phe | 110 | 115 | 120 |    |
| Val | Gly | Phe | Cys | Phe | Leu | Thr | Asn | Gln | Trp | Ala | Val | Thr | Asn | Pro | 125 | 130 | 135 |    |
| Lys | Asp | Val | Leu | Val | Gly | Ala | Asp | Ser | Val | Arg | Ala | Ala | Ile | Thr | 140 | 145 | 150 |    |

Phe Ser Phe Phe Ser Ile Phe Ser Trp Gly Val Leu Ala Ser Leu  
 155 160 165  
 Ala Tyr Gln Arg Tyr Lys Ala Gly Val Asp Asp Phe Ile Gln Asn  
 170 175 180  
 Tyr Val Asp Pro Thr Pro Asp Pro Asn Thr Ala Tyr Ala Ser Tyr  
 185 190 195  
 Pro Gly Ala Ser Val Asp Asn Tyr Gln Gln Pro Pro Phe Thr Gln  
 200 205 210  
 Asn Ala Glu Thr Thr Glu Gly Tyr Gln Pro Pro Pro Val Tyr  
 215 220

<210> 163  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 163  
 tggctcttcgc cttgatcgtg ttct 24

<210> 164  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 164  
 gtgtactgag cggcggtttag 20

<210> 165  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 165  
 ctgaaggtga tggctgccct cac 23

<210> 166  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 166  
ccaggaggct catgggaaag tcc 23

<210> 167  
<211> 50  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 167  
ccacgagtct aagcagatgt actgctgtt caaccgcaac gaggatgcct 50

<210> 168  
<211> 3143  
<212> DNA  
<213> Homo sapiens

<400> 168  
gagccaccta ccctgctccg aggccaggcc tgcaggcct catcgccag 50  
agggtgatca gtgagcagaa ggatgccgt ggccgaggcc ccccaggtgg 100  
ctggcgggca gggggacgga ggtgatggcg aggaagcgga gccagagggg 150  
atgttcaagg cctgtgagga ctccaagaga aaagccggg gctacctccg 200  
cctggtgccc ctgtttgtgc tgctggccct gctcgtgtg gcttcggcgg 250  
gggtgctact ctggtatttc ctagggtaca aggcggaggt gatggtcagc 300  
cagggtgact caggcagtct gcgtgtactc aatcgccact tctcccagga 350  
tcttaccgc cggaatcta gtgccttccg cagtgaacc gccaaagccc 400  
agaagatgct caaggagctc atcaccagca cccgcctggg aacttactac 450  
aactccagct cegtctattc ctttggggag ggaccctca cctgcttctt 500  
ctggttcatt ctccaaatcc ccgagcaccg ccggtgatg ctgagccccg 550  
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tcggctgccg tcccctacag ggccgagtac gaagtggacc ccgagggcct 650  
agtgatcctg gaagccagtg tgaaagacat agctgcattg aattccacgc 700  
tgggttgta cgcctacagc tacgtgggcc agggccaggt cctccggctg 750  
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caaggacctc atgctcaaac tccggctgga gtggacgctg gcagagtgcc 850  
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tatgcactga ggaggcagaa gtatgatttg ccgtgcaccc agggccagt 1250  
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tgggcgggcc gactgcaggg acggctcgga tgaggagcac tgtgactgtg 1750  
gcctccaggg cccctccagc cgcattgttg gtggagctgt gtctccag 1800  
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tccaggagga cagcatggcc tccacgggtg tgtggaccgt gttcctgggc 1950  
aaggtgtggc agaactcgcg ctggcctgga gaggtgtcct tcaaggtgag 2000  
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<400> 169

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|
| Met | Pro | Val | Ala | Glu | Ala | Pro | Gln | Val | Ala | Gly | Gly | Gln | Gly | Asp | 1  | 5  | 10 | 15 |
| Gly | Gly | Asp | Gly | Glu | Glu | Ala | Glu | Pro | Glu | Gly | Met | Phe | Lys | Ala | 20 | 25 | 30 |    |
| Cys | Glu | Asp | Ser | Lys | Arg | Lys | Ala | Arg | Gly | Tyr | Leu | Arg | Leu | Val | 35 | 40 | 45 |    |
| Pro | Leu | Phe | Val | Leu | Leu | Ala | Leu | Leu | Val | Leu | Ala | Ser | Ala | Gly | 50 | 55 | 60 |    |
| Val | Leu | Leu | Trp | Tyr | Phe | Leu | Gly | Tyr | Lys | Ala | Glu | Val | Met | Val | 65 | 70 | 75 |    |
| Ser | Gln | Val | Tyr | Ser | Gly | Ser | Leu | Arg | Val | Leu | Asn | Arg | His | Phe | 80 | 85 | 90 |    |
| Ser | Gln | Asp | Leu | Thr | Arg | Arg | Glu | Ser | Ser | Ala | Phe | Arg | Ser | Glu |    |    |    |    |

|                 |                     |                         |     |     |     |
|-----------------|---------------------|-------------------------|-----|-----|-----|
|                 | 95                  |                         | 100 |     | 105 |
| Thr Ala Lys Ala | Gln Lys Met Leu Lys | Glu Leu Ile Thr Ser Thr |     |     |     |
|                 | 110                 | 115                     |     | 120 |     |
| Arg Leu Gly Thr | Tyr Tyr Asn Ser Ser | Ser Val Tyr Ser Phe Gly |     |     |     |
|                 | 125                 | 130                     |     | 135 |     |
| Glu Gly Pro Leu | Thr Cys Phe Phe Trp | Phe Ile Leu Gln Ile Pro |     |     |     |
|                 | 140                 | 145                     |     | 150 |     |
| Glu His Arg Arg | Leu Met Leu Ser Pro | Glu Val Val Gln Ala Leu |     |     |     |
|                 | 155                 | 160                     |     | 165 |     |
| Leu Val Glu Glu | Leu Leu Ser Thr Val | Asn Ser Ser Ala Ala Val |     |     |     |
|                 | 170                 | 175                     |     | 180 |     |
| Pro Tyr Arg Ala | Glu Tyr Glu Val Asp | Pro Glu Gly Leu Val Ile |     |     |     |
|                 | 185                 | 190                     |     | 195 |     |
| Leu Glu Ala Ser | Val Lys Asp Ile Ala | Ala Leu Asn Ser Thr Leu |     |     |     |
|                 | 200                 | 205                     |     | 210 |     |
| Gly Cys Tyr Arg | Tyr Ser Tyr Val Gly | Gln Gly Gln Val Leu Arg |     |     |     |
|                 | 215                 | 220                     |     | 225 |     |
| Leu Lys Gly Pro | Asp His Leu Ala Ser | Ser Cys Leu Trp His Leu |     |     |     |
|                 | 230                 | 235                     |     | 240 |     |
| Gln Gly Pro Lys | Asp Leu Met Leu Lys | Leu Arg Leu Glu Trp Thr |     |     |     |
|                 | 245                 | 250                     |     | 255 |     |
| Leu Ala Glu Cys | Arg Asp Arg Leu Ala | Met Tyr Asp Val Ala Gly |     |     |     |
|                 | 260                 | 265                     |     | 270 |     |
| Pro Leu Glu Lys | Arg Leu Ile Thr Ser | Val Tyr Gly Cys Ser Arg |     |     |     |
|                 | 275                 | 280                     |     | 285 |     |
| Gln Glu Pro Val | Val Glu Val Leu Ala | Ser Gly Ala Ile Met Ala |     |     |     |
|                 | 290                 | 295                     |     | 300 |     |
| Val Val Trp Lys | Lys Gly Leu His Ser | Tyr Tyr Asp Pro Phe Val |     |     |     |
|                 | 305                 | 310                     |     | 315 |     |
| Leu Ser Val Gln | Pro Val Val Phe Gln | Ala Cys Glu Val Asn Leu |     |     |     |
|                 | 320                 | 325                     |     | 330 |     |
| Thr Leu Asp Asn | Arg Leu Asp Ser Gln | Gly Val Leu Ser Thr Pro |     |     |     |
|                 | 335                 | 340                     |     | 345 |     |
| Tyr Phe Pro Ser | Tyr Tyr Ser Pro Gln | Thr His Cys Ser Trp His |     |     |     |
|                 | 350                 | 355                     |     | 360 |     |
| Leu Thr Val Pro | Ser Leu Asp Tyr Gly | Leu Ala Leu Trp Phe Asp |     |     |     |
|                 | 365                 | 370                     |     | 375 |     |
| Ala Tyr Ala Leu | Arg Arg Gln Lys Tyr | Asp Leu Pro Cys Thr Gln |     |     |     |

| 380 |     |     |     |     |     |     |     |     |     | 385 |     |     |     |     | 390 |  |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Gly | Gln | Trp | Thr | Ile | Gln | Asn | Arg | Arg | Leu | Cys | Gly | Leu | Arg | Ile |     |  |  |  |  |
|     |     |     |     | 395 |     |     |     |     | 400 |     |     |     |     | 405 |     |  |  |  |  |
| Leu | Gln | Pro | Tyr | Ala | Glu | Arg | Ile | Pro | Val | Val | Ala | Thr | Ala | Gly |     |  |  |  |  |
|     |     |     |     | 410 |     |     |     |     | 415 |     |     |     |     | 420 |     |  |  |  |  |
| Ile | Thr | Ile | Asn | Phe | Thr | Ser | Gln | Ile | Ser | Leu | Thr | Gly | Pro | Gly |     |  |  |  |  |
|     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |     | 435 |     |  |  |  |  |
| Val | Arg | Val | His | Tyr | Gly | Leu | Tyr | Asn | Gln | Ser | Asp | Pro | Cys | Pro |     |  |  |  |  |
|     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     | 450 |     |  |  |  |  |
| Gly | Glu | Phe | Leu | Cys | Ser | Val | Asn | Gly | Leu | Cys | Val | Pro | Ala | Cys |     |  |  |  |  |
|     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     | 465 |     |  |  |  |  |
| Asp | Gly | Val | Lys | Asp | Cys | Pro | Asn | Gly | Leu | Asp | Glu | Arg | Asn | Cys |     |  |  |  |  |
|     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |     |  |  |  |  |
| Val | Cys | Arg | Ala | Thr | Phe | Gln | Cys | Lys | Glu | Asp | Ser | Thr | Cys | Ile |     |  |  |  |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |  |  |  |  |
| Ser | Leu | Pro | Lys | Val | Cys | Asp | Gly | Gln | Pro | Asp | Cys | Leu | Asn | Gly |     |  |  |  |  |
|     |     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |  |  |  |  |
| Ser | Asp | Glu | Glu | Gln | Cys | Gln | Glu | Gly | Val | Pro | Cys | Gly | Thr | Phe |     |  |  |  |  |
|     |     |     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |  |  |  |  |
| Thr | Phe | Gln | Cys | Glu | Asp | Arg | Ser | Cys | Val | Lys | Lys | Pro | Asn | Pro |     |  |  |  |  |
|     |     |     |     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |  |  |  |  |
| Gln | Cys | Asp | Gly | Arg | Pro | Asp | Cys | Arg | Asp | Gly | Ser | Asp | Glu | Glu |     |  |  |  |  |
|     |     |     |     | 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |  |  |  |  |
| His | Cys | Asp | Cys | Gly | Leu | Gln | Gly | Pro | Ser | Ser | Arg | Ile | Val | Gly |     |  |  |  |  |
|     |     |     |     | 560 |     |     |     |     | 565 |     |     |     |     | 570 |     |  |  |  |  |
| Gly | Ala | Val | Ser | Ser | Glu | Gly | Glu | Trp | Pro | Trp | Gln | Ala | Ser | Leu |     |  |  |  |  |
|     |     |     |     | 575 |     |     |     |     | 580 |     |     |     |     | 585 |     |  |  |  |  |
| Gln | Val | Arg | Gly | Arg | His | Ile | Cys | Gly | Gly | Ala | Leu | Ile | Ala | Asp |     |  |  |  |  |
|     |     |     |     | 590 |     |     |     |     | 595 |     |     |     |     | 600 |     |  |  |  |  |
| Arg | Trp | Val | Ile | Thr | Ala | Ala | His | Cys | Phe | Gln | Glu | Asp | Ser | Met |     |  |  |  |  |
|     |     |     |     | 605 |     |     |     |     | 610 |     |     |     |     | 615 |     |  |  |  |  |
| Ala | Ser | Thr | Val | Leu | Trp | Thr | Val | Phe | Leu | Gly | Lys | Val | Trp | Gln |     |  |  |  |  |
|     |     |     |     | 620 |     |     |     |     | 625 |     |     |     |     | 630 |     |  |  |  |  |
| Asn | Ser | Arg | Trp | Pro | Gly | Glu | Val | Ser | Phe | Lys | Val | Ser | Arg | Leu |     |  |  |  |  |
|     |     |     |     | 635 |     |     |     |     | 640 |     |     |     |     | 645 |     |  |  |  |  |
| Leu | Leu | His | Pro | Tyr | His | Glu | Glu | Asp | Ser | His | Asp | Tyr | Asp | Val |     |  |  |  |  |
|     |     |     |     | 650 |     |     |     |     | 655 |     |     |     |     | 660 |     |  |  |  |  |
| Ala | Leu | Leu | Gln | Leu | Asp | His | Pro | Val | Val | Arg | Ser | Ala | Ala | Val |     |  |  |  |  |

| 665 |     |     |     |     | 670 |     |     |     |     | 675 |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Pro | Val | Cys | Leu | Pro | Ala | Arg | Ser | His | Phe | Phe | Glu | Pro | Gly |
|     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |     | 690 |
| Leu | His | Cys | Trp | Ile | Thr | Gly | Trp | Gly | Ala | Leu | Arg | Glu | Gly | Gly |
|     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     | 705 |
| Pro | Ile | Ser | Asn | Ala | Leu | Gln | Lys | Val | Asp | Val | Gln | Leu | Ile | Pro |
|     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Gln | Asp | Leu | Cys | Ser | Glu | Ala | Tyr | Arg | Tyr | Gln | Val | Thr | Pro | Arg |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |
| Met | Leu | Cys | Ala | Gly | Tyr | Arg | Lys | Gly | Lys | Lys | Asp | Ala | Cys | Gln |
|     |     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |
| Gly | Asp | Ser | Gly | Gly | Pro | Leu | Val | Cys | Lys | Ala | Leu | Ser | Gly | Arg |
|     |     |     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |
| Trp | Phe | Leu | Ala | Gly | Leu | Val | Ser | Trp | Gly | Leu | Gly | Cys | Gly | Arg |
|     |     |     |     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |
| Pro | Asn | Tyr | Phe | Gly | Val | Tyr | Thr | Arg | Ile | Thr | Gly | Val | Ile | Ser |
|     |     |     |     | 785 |     |     |     |     | 790 |     |     |     |     | 795 |
| Trp | Ile | Gln | Gln | Val | Val | Val | Thr |     |     |     |     |     |     |     |
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<212> PRT

<213> Homo sapiens

<400> 178

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| Met | Ser | Asn | Ser | Val | Pro | Leu | Leu | Cys | Phe | Trp | Ser | Leu | Cys | Tyr |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |
| Cys | Phe | Ala | Ala | Gly | Ser | Pro | Val | Pro | Phe | Gly | Pro | Glu | Gly | Arg |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |
| Leu | Glu | Asp | Lys | Leu | His | Lys | Pro | Lys | Ala | Thr | Gln | Thr | Glu | Val |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |
| Lys | Pro | Ser | Val | Arg | Phe | Asn | Leu | Arg | Thr | Ser | Lys | Asp | Pro | Glu |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |
| His | Glu | Gly | Cys | Tyr | Leu | Ser | Val | Gly | His | Ser | Gln | Pro | Leu | Glu |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |
| Asp | Cys | Ser | Phe | Asn | Met | Thr | Ala | Lys | Thr | Phe | Phe | Ile | Ile | His |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |
| Gly | Trp | Thr | Met | Ser | Gly | Ile | Phe | Glu | Asn | Trp | Leu | His | Lys | Leu |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |
| Val | Ser | Ala | Leu | His | Thr | Arg | Glu | Lys | Asp | Ala | Asn | Val | Val | Val |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |
| Val | Asp | Trp | Leu | Pro | Leu | Ala | His | Gln | Leu | Tyr | Thr | Asp | Ala | Val |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |
| Asn | Asn | Thr | Arg | Val | Val | Gly | His | Ser | Ile | Ala | Arg | Met | Leu | Asp |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |
| Trp | Leu | Gln | Glu | Lys | Asp | Asp | Phe | Ser | Leu | Gly | Asn | Val | His | Leu |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |
| Ile | Gly | Tyr | Ser | Leu | Gly | Ala | His | Val | Ala | Gly | Tyr | Ala | Gly | Asn |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |
| Phe | Val | Lys | Gly | Thr | Val | Gly | Arg | Ile | Thr | Gly | Leu | Asp | Pro | Ala |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |
| Gly | Pro | Met | Phe | Glu | Gly | Ala | Asp | Ile | His | Lys | Arg | Leu | Ser | Pro |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |
| Asp | Asp | Ala | Asp | Phe | Val | Asp | Val | Leu | His | Thr | Tyr | Thr | Arg | Ser |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |
| Phe | Gly | Leu | Ser | Ile | Gly | Ile | Gln | Met | Pro | Val | Gly | His | Ile | Asp |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Ile | Tyr | Pro | Asn | Gly | Gly | Asp | Phe | Gln | Pro | Gly | Cys | Gly | Leu | Asn |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |
| Asp | Val | Leu | Gly | Ser | Ile | Ala | Tyr | Gly | Thr | Ile | Thr | Glu | Val | Val |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |
| Lys | Cys | Glu | His | Glu | Arg | Ala | Val | His | Leu | Phe | Val | Asp | Ser | Leu |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |

Val Asn Gln Asp Lys Pro Ser Phe Ala Phe Gln Cys Thr Asp Ser  
290 295 300

Asn Arg Phe Lys Lys Gly Ile Cys Leu Ser Cys Arg Lys Asn Arg  
305 310 315

Cys Asn Ser Ile Gly Tyr Asn Ala Lys Lys Met Arg Asn Lys Arg  
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Asn Ser Lys Met Tyr Leu Lys Thr Arg Ala Gly Met Pro Phe Arg  
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Gly Asn Leu Gln Ser Leu Glu Cys Pro  
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<223> Synthetic oligonucleotide probe

<400> 180

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<210> 181

<211> 44

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

<400> 181

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<210> 182

<211> 3240

<212> DNA

<213> Homo sapiens

<400> 182

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<210> 183

<211> 713

<212> PRT

<213> Homo sapiens

<400> 183

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Leu | Ala | Thr | Leu | Leu | Leu | Leu | Leu | Gly | Gly | Ala | Leu | 1   | 5   | 10  | 15  |
| Ala | His | Pro | Asp | Arg | Ile | Ile | Phe | Pro | Asn | His | Ala | Cys | Glu | Asp | 20  | 25  | 30  |
| Pro | Pro | Ala | Val | Leu | Leu | Glu | Val | Gln | Gly | Thr | Leu | Gln | Arg | Pro | 35  | 40  | 45  |
| Leu | Val | Arg | Asp | Ser | Arg | Thr | Ser | Pro | Ala | Asn | Cys | Thr | Trp | Leu | 50  | 55  | 60  |
| Ile | Leu | Gly | Ser | Lys | Glu | Gln | Thr | Val | Thr | Ile | Arg | Phe | Gln | Lys | 65  | 70  | 75  |
| Leu | His | Leu | Ala | Cys | Gly | Ser | Glu | Arg | Leu | Thr | Leu | Arg | Ser | Pro | 80  | 85  | 90  |
| Leu | Gln | Pro | Leu | Ile | Ser | Leu | Cys | Glu | Ala | Pro | Pro | Ser | Pro | Leu | 95  | 100 | 105 |
| Gln | Leu | Pro | Gly | Gly | Asn | Val | Thr | Ile | Thr | Tyr | Ser | Tyr | Ala | Gly | 110 | 115 | 120 |
| Ala | Arg | Ala | Pro | Met | Gly | Gln | Gly | Phe | Leu | Leu | Ser | Tyr | Ser | Gln | 125 | 130 | 135 |
| Asp | Trp | Leu | Met | Cys | Leu | Gln | Glu | Glu | Phe | Gln | Cys | Leu | Asn | His | 140 | 145 | 150 |
| Arg | Cys | Val | Ser | Ala | Val | Gln | Arg | Cys | Asp | Gly | Val | Asp | Ala | Cys | 155 | 160 | 165 |
| Gly | Asp | Gly | Ser | Asp | Glu | Ala | Gly | Cys | Ser | Ser | Asp | Pro | Phe | Pro | 170 | 175 | 180 |
| Gly | Leu | Thr | Pro | Arg | Pro | Val | Pro | Ser | Leu | Pro | Cys | Asn | Val | Thr |     |     |     |



|                                     | 185 |                         | 190 |  | 195 |
|-------------------------------------|-----|-------------------------|-----|--|-----|
| Leu Glu Asp Phe Tyr Gly Val Phe Ser | 200 | Ser Pro Gly Tyr Thr His | 205 |  | 210 |
| Leu Ala Ser Val Ser His Pro Gln Ser | 215 | Cys His Trp Leu Leu Asp | 220 |  | 225 |
| Pro His Asp Gly Arg Arg Leu Ala Val | 230 | Arg Phe Thr Ala Leu Asp | 235 |  | 240 |
| Leu Gly Phe Gly Asp Ala Val His Val | 245 | Tyr Asp Gly Pro Gly Pro | 250 |  | 255 |
| Pro Glu Ser Ser Arg Leu Leu Arg Ser | 260 | Leu Thr His Phe Ser Asn | 265 |  | 270 |
| Gly Lys Ala Val Thr Val Glu Thr Leu | 275 | Ser Gly Gln Ala Val Val | 280 |  | 285 |
| Ser Tyr His Thr Val Ala Trp Ser Asn | 290 | Gly Arg Gly Phe Asn Ala | 295 |  | 300 |
| Thr Tyr His Val Arg Gly Tyr Cys Leu | 305 | Pro Trp Asp Arg Pro Cys | 310 |  | 315 |
| Gly Leu Gly Ser Gly Leu Gly Ala Gly | 320 | Glu Gly Leu Gly Glu Arg | 325 |  | 330 |
| Cys Tyr Ser Glu Ala Gln Arg Cys Asp | 335 | Gly Ser Trp Asp Cys Ala | 340 |  | 345 |
| Asp Gly Thr Asp Glu Glu Asp Cys Pro | 350 | Gly Cys Pro Pro Gly His | 355 |  | 360 |
| Phe Pro Cys Gly Ala Ala Gly Thr Ser | 365 | Gly Ala Thr Ala Cys Tyr | 370 |  | 375 |
| Leu Pro Ala Asp Arg Cys Asn Tyr Gln | 380 | Thr Phe Cys Ala Asp Gly | 385 |  | 390 |
| Ala Asp Glu Arg Arg Cys Arg His Cys | 395 | Gln Pro Gly Asn Phe Arg | 400 |  | 405 |
| Cys Arg Asp Glu Lys Cys Val Tyr Glu | 410 | Thr Trp Val Cys Asp Gly | 415 |  | 420 |
| Gln Pro Asp Cys Ala Asp Gly Ser Asp | 425 | Glu Trp Asp Cys Ser Tyr | 430 |  | 435 |
| Val Leu Pro Arg Lys Val Ile Thr Ala | 440 | Ala Val Ile Gly Ser Leu | 445 |  | 450 |
| Val Cys Gly Leu Leu Leu Val Ile Ala | 455 | Leu Gly Cys Thr Cys Lys | 460 |  | 465 |
| Leu Tyr Ala Ile Arg Thr Gln Glu Tyr |     | Ser Ile Phe Ala Pro Leu |     |  |     |

| 470 |     |     |     |     | 475 |     |     |     |     | 480 |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Arg | Met | Glu | Ala | Glu | Ile | Val | Gln | Gln | Gln | Ala | Pro | Pro | Ser |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |
| Tyr | Gly | Gln | Leu | Ile | Ala | Gln | Gly | Ala | Ile | Pro | Pro | Val | Glu | Asp |
|     |     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |
| Phe | Pro | Thr | Glu | Asn | Pro | Asn | Asp | Asn | Ser | Val | Leu | Gly | Asn | Leu |
|     |     |     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |
| Arg | Ser | Leu | Leu | Gln | Ile | Leu | Arg | Gln | Asp | Met | Thr | Pro | Gly | Gly |
|     |     |     |     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |
| Gly | Pro | Gly | Ala | Arg | Arg | Arg | Gln | Arg | Gly | Arg | Leu | Met | Arg | Arg |
|     |     |     |     | 545 |     |     |     |     | 550 |     |     |     |     | 555 |
| Leu | Val | Arg | Arg | Leu | Arg | Arg | Trp | Gly | Leu | Leu | Pro | Arg | Thr | Asn |
|     |     |     |     | 560 |     |     |     |     | 565 |     |     |     |     | 570 |
| Thr | Pro | Ala | Arg | Ala | Ser | Glu | Ala | Arg | Ser | Gln | Val | Thr | Pro | Ser |
|     |     |     |     | 575 |     |     |     |     | 580 |     |     |     |     | 585 |
| Ala | Ala | Pro | Leu | Glu | Ala | Leu | Asp | Gly | Gly | Thr | Gly | Pro | Ala | Arg |
|     |     |     |     | 590 |     |     |     |     | 595 |     |     |     |     | 600 |
| Glu | Gly | Gly | Ala | Val | Gly | Gly | Gln | Asp | Gly | Glu | Gln | Ala | Pro | Pro |
|     |     |     |     | 605 |     |     |     |     | 610 |     |     |     |     | 615 |
| Leu | Pro | Ile | Lys | Ala | Pro | Leu | Pro | Ser | Ala | Ser | Thr | Ser | Pro | Ala |
|     |     |     |     | 620 |     |     |     |     | 625 |     |     |     |     | 630 |
| Pro | Thr | Thr | Val | Pro | Glu | Ala | Pro | Gly | Pro | Leu | Pro | Ser | Leu | Pro |
|     |     |     |     | 635 |     |     |     |     | 640 |     |     |     |     | 645 |
| Leu | Glu | Pro | Ser | Leu | Leu | Ser | Gly | Val | Val | Gln | Ala | Leu | Arg | Gly |
|     |     |     |     | 650 |     |     |     |     | 655 |     |     |     |     | 660 |
| Arg | Leu | Leu | Pro | Ser | Leu | Gly | Pro | Pro | Gly | Pro | Thr | Arg | Ser | Pro |
|     |     |     |     | 665 |     |     |     |     | 670 |     |     |     |     | 675 |
| Pro | Gly | Pro | His | Thr | Ala | Val | Leu | Ala | Leu | Glu | Asp | Glu | Asp | Asp |
|     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |     | 690 |
| Val | Leu | Leu | Val | Pro | Leu | Ala | Glu | Pro | Gly | Val | Trp | Val | Ala | Glu |
|     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     | 705 |
| Ala | Glu | Asp | Glu | Pro | Leu | Leu | Thr |     |     |     |     |     |     |     |
|     |     |     |     | 710 |     |     |     |     |     |     |     |     |     |     |

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<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 184  
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<210> 185  
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<220>  
<223> Synthetic oligonucleotide probe

<400> 185  
gcaaggatcat tacagctg 18

<210> 186  
<211> 23  
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<220>  
<223> Synthetic oligonucleotide probe

<400> 186  
agaacatagg agcagtcacca ctc 23

<210> 187  
<211> 23  
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<220>  
<223> Synthetic oligonucleotide probe

<400> 187  
tgcttgctgc tgcacaatct cag 23

<210> 188  
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<220>  
<223> Synthetic oligonucleotide probe

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<210> 189  
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<212> DNA  
<213> Homo sapiens

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gaaagtgctg ctgctgggtc tgcagacgcg atggataacg tgcagccgaa 150  
 aataaaacat ccccccttct gcttcagtgt gaaaggccac gtgaagatgc 200  
 tgcggctggc actaactgtg acatctatga ccttttttat catcgacaaa 250  
 gccctgaac catatattgt tatcactgga tttgaagtca ccgttatctt 300  
 atttttcata cttttatatg tactcagact tgatcgatta atgaagtgg 350  
 tattttggcc tttgcttgat attatcaact cactggtaac aacagtattc 400  
 atgctcatcg tatctgtgtt ggcactgata ccagaaacca caacattgac 450  
 agttggtgga ggggtgtttg cacttgtgac agcagtatgc tgtcttgccg 500  
 acggggccct tatttaccgg aagcttctgt tcaatcccag cggtccttac 550  
 cagaaaaagc ctgtgcatga aaaaaagaa gttttgtaat tttatattac 600  
 tttttagttt gatactaagt attaaacata tttctgtatt cttccaaaaa 650  
 aaaaaaaaaa aaa 663

<210> 190

<211> 152

<212> PRT

<213> Homo sapiens

<400> 190

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Asp | Asn | Val | Gln | Pro | Lys | Ile | Lys | His | Arg | Pro | Phe | Cys | Phe | 1   | 5   | 10  | 15 |
| Ser | Val | Lys | Gly | His | Val | Lys | Met | Leu | Arg | Leu | Ala | Leu | Thr | Val | 20  | 25  | 30  |    |
| Thr | Ser | Met | Thr | Phe | Phe | Ile | Ile | Ala | Gln | Ala | Pro | Glu | Pro | Tyr | 35  | 40  | 45  |    |
| Ile | Val | Ile | Thr | Gly | Phe | Glu | Val | Thr | Val | Ile | Leu | Phe | Phe | Ile | 50  | 55  | 60  |    |
| Leu | Leu | Tyr | Val | Leu | Arg | Leu | Asp | Arg | Leu | Met | Lys | Trp | Leu | Phe | 65  | 70  | 75  |    |
| Trp | Pro | Leu | Leu | Asp | Ile | Ile | Asn | Ser | Leu | Val | Thr | Thr | Val | Phe | 80  | 85  | 90  |    |
| Met | Leu | Ile | Val | Ser | Val | Leu | Ala | Leu | Ile | Pro | Glu | Thr | Thr | Thr | 95  | 100 | 105 |    |
| Leu | Thr | Val | Gly | Gly | Gly | Val | Phe | Ala | Leu | Val | Thr | Ala | Val | Cys | 110 | 115 | 120 |    |
| Cys | Leu | Ala | Asp | Gly | Ala | Leu | Ile | Tyr | Arg | Lys | Leu | Leu | Phe | Asn | 125 | 130 | 135 |    |

Pro Ser Gly Pro Tyr Gln Lys Lys Pro Val His Glu Lys Lys Glu  
140 145 150

Val Leu

<210> 191  
<211> 495  
<212> DNA  
<213> Homo sapiens

<220>  
<221> unsure  
<222> 78, 212, 234, 487  
<223> unknown base

<400> 191  
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ctgctgctgg gtctgcagac gcgatggata acgtgcagcc gaaaataaaa 150  
catcgcccct tctgcttcag tgtgaaaggc cacgtgaaga tgctgctggct 200  
ggcactaact gngacatcta tgaccttttt tatnatcgca caagcccctg 250  
aaccatatat tgttatcact ggatttgaag tcaccgttat cttatttttc 300  
atacttttat atgtactcag acttgatcga ttaatgaagt ggttattttg 350  
gcctttgctt gatattatca actcactggt aacaacagta ttcatgctca 400  
tcgtatctgt gttggcactg ataccagaaa ccacaacatt gacagttggt 450  
ggaggggtgt ttgcacttgt gacagcagta tgctgtnttg ccgac 495

<210> 192  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 192  
cgttttgcag aacctactca ggcag 25

<210> 193  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 193  
cctccaccaa ctgtcaatgt tgtgg 25

<210> 194  
<211> 40  
<212> DNA  
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<220>  
<223> Synthetic oligonucleotide probe

<400> 194  
aaagtgtgc tgctgggtct gcagacgca tggataacgt 40

<210> 195  
<211> 1879  
<212> DNA  
<213> Homo sapien

<400> 195  
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cactggcccc ggcgctgctg ctgcctctgc tggcccagtg gtcctgcgc 150  
gccgccccgc agctggcccc cgcgcccttc acgctgcccc tccgggtggc 200  
cgcgggccacg aaccgcgtag ttgcgcccac cccgggaccc gggacccctg 250  
ccgagcgcca cgccgacggc ttggcgctcg ccctggagcc tgcctggcg 300  
tccccgcgg gcgcccga cttcttgcc atggtagaca acctgcaggg 350  
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agaagctaca gattctcgtt gacactggaa gcagtaactt tgccgtggca 450  
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cacataccgc tccaagggct ttgacgtcac agtgaagtac acacaaggaa 550  
gctggacggg cttcgttggg gaagacctcg tcaccatccc caaaggcttc 600  
aatacttctt ttcttgtcaa cattgccact atttttgaat cagagaattt 650  
ctttttgcct gggattaaat ggaatggaat acttggccta gcttatgcca 700  
cacttgccaa gccatcaagt tctctggaga ctttcttcga ctccctggtg 750  
acacaagcaa acatcccaa cgttttctcc atgcagatgt gtggagccgg 800  
cttgcccgtt gctggatctg ggaccaacgg aggtagtctt gtcttgggtg 850  
gaattgaacc aagtttgtat aaaggagaca tctggtatac ccctattaag 900  
gaagagtggg actaccagat agaaattctg aaattggaaa ttggaggcca 950

aagccttaat ctggactgca gagagtataa cgcagacaag gccatcgtgg 1000  
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atgcgctggt gatcggtgcc acggtgatgg agggcttcta cgtcatcttc 1350  
gacagagccc agaagagggg gggcttcgca gcgagcccct gtgcagaaat 1400  
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attgtgtcct atgcgctcat gagcgtctgt ggagccatcc tccttgtctt 1550  
aatcgtcctg ctgctgctgc cgttccgggtg tcagcgtcgc ccccgtagacc 1600  
ctgaggtcgt caatgatgag tcctctctgg tcagacatcg ctggaaatga 1650  
atagccaggc ctgacctcaa gcaaccatga actcagctat taagaaaatc 1700  
acatttccag ggcagcagcc gggatcgatg gtggcgcttt ctctgtgcc 1750  
caccgctctt caatctctgt tctgctccca gatgccttct agattcactg 1800  
tcttttgatt cttgattttc aagctttcaa atcctcccta cttccaagaa 1850  
aaataattaa aaaaaaaact tcattctaa 1879

<210> 196

<211> 518

<212> PRT.

<213> Homo sapien

<400> 196

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Ala | Leu | Ala | Arg | Ala | Leu | Leu | Leu | Pro | Leu | Leu | Ala | Gln |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Leu | Leu | Arg | Ala | Ala | Pro | Glu | Leu | Ala | Pro | Ala | Pro | Phe | Thr |
|     |     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Pro | Leu | Arg | Val | Ala | Ala | Ala | Thr | Asn | Arg | Val | Val | Ala | Pro |
|     |     |     | 35  |     |     |     |     |     | 40  |     |     |     |     | 45  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Pro | Gly | Pro | Gly | Thr | Pro | Ala | Glu | Arg | His | Ala | Asp | Gly | Leu |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Leu | Ala | Leu | Glu | Pro | Ala | Leu | Ala | Ser | Pro | Ala | Gly | Ala | Ala |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |
| Asn | Phe | Leu | Ala | Met | Val | Asp | Asn | Leu | Gln | Gly | Asp | Ser | Gly | Arg |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |
| Gly | Tyr | Tyr | Leu | Glu | Met | Leu | Ile | Gly | Thr | Pro | Pro | Gln | Lys | Leu |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |
| Gln | Ile | Leu | Val | Asp | Thr | Gly | Ser | Ser | Asn | Phe | Ala | Val | Ala | Gly |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |
| Thr | Pro | His | Ser | Tyr | Ile | Asp | Thr | Tyr | Phe | Asp | Thr | Glu | Arg | Ser |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |
| Ser | Thr | Tyr | Arg | Ser | Lys | Gly | Phe | Asp | Val | Thr | Val | Lys | Tyr | Thr |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |
| Gln | Gly | Ser | Trp | Thr | Gly | Phe | Val | Gly | Glu | Asp | Leu | Val | Thr | Ile |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |
| Pro | Lys | Gly | Phe | Asn | Thr | Ser | Phe | Leu | Val | Asn | Ile | Ala | Thr | Ile |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |
| Phe | Glu | Ser | Glu | Asn | Phe | Phe | Leu | Pro | Gly | Ile | Lys | Trp | Asn | Gly |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |
| Ile | Leu | Gly | Leu | Ala | Tyr | Ala | Thr | Leu | Ala | Lys | Pro | Ser | Ser | Ser |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |
| Leu | Glu | Thr | Phe | Phe | Asp | Ser | Leu | Val | Thr | Gln | Ala | Asn | Ile | Pro |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |
| Asn | Val | Phe | Ser | Met | Gln | Met | Cys | Gly | Ala | Gly | Leu | Pro | Val | Ala |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Gly | Ser | Gly | Thr | Asn | Gly | Gly | Ser | Leu | Val | Leu | Gly | Gly | Ile | Glu |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |
| Pro | Ser | Leu | Tyr | Lys | Gly | Asp | Ile | Trp | Tyr | Thr | Pro | Ile | Lys | Glu |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |
| Glu | Trp | Tyr | Tyr | Gln | Ile | Glu | Ile | Leu | Lys | Leu | Glu | Ile | Gly | Gly |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |
| Gln | Ser | Leu | Asn | Leu | Asp | Cys | Arg | Glu | Tyr | Asn | Ala | Asp | Lys | Ala |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |
| Ile | Val | Asp | Ser | Gly | Thr | Thr | Leu | Leu | Arg | Leu | Pro | Gln | Lys | Val |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |
| Phe | Asp | Ala | Val | Val | Glu | Ala | Val | Ala | Arg | Ala | Ser | Leu | Ile | Pro |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |
| Glu | Phe | Ser | Asp | Gly | Phe | Trp | Thr | Gly | Ser | Gln | Leu | Ala | Cys | Trp |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Thr | Asn | Ser | Glu | Thr | Pro | Trp | Ser | Tyr | Phe | Pro | Lys | Ile | Ser | Ile |  |
|     |     |     |     | 350 |     |     |     |     | 355 |     |     |     |     | 360 |  |
| Tyr | Leu | Arg | Asp | Glu | Asn | Ser | Ser | Arg | Ser | Phe | Arg | Ile | Thr | Ile |  |
|     |     |     |     | 365 |     |     |     |     | 370 |     |     |     |     | 375 |  |
| Leu | Pro | Gln | Leu | Tyr | Ile | Gln | Pro | Met | Met | Gly | Ala | Gly | Leu | Asn |  |
|     |     |     |     | 380 |     |     |     |     | 385 |     |     |     |     | 390 |  |
| Tyr | Glu | Cys | Tyr | Arg | Phe | Gly | Ile | Ser | Pro | Ser | Thr | Asn | Ala | Leu |  |
|     |     |     |     | 395 |     |     |     |     | 400 |     |     |     |     | 405 |  |
| Val | Ile | Gly | Ala | Thr | Val | Met | Glu | Gly | Phe | Tyr | Val | Ile | Phe | Asp |  |
|     |     |     |     | 410 |     |     |     |     | 415 |     |     |     |     | 420 |  |
| Arg | Ala | Gln | Lys | Arg | Val | Gly | Phe | Ala | Ala | Ser | Pro | Cys | Ala | Glu |  |
|     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |     | 435 |  |
| Ile | Ala | Gly | Ala | Ala | Val | Ser | Glu | Ile | Ser | Gly | Pro | Phe | Ser | Thr |  |
|     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     | 450 |  |
| Glu | Asp | Val | Ala | Ser | Asn | Cys | Val | Pro | Ala | Gln | Ser | Leu | Ser | Glu |  |
|     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     | 465 |  |
| Pro | Ile | Leu | Trp | Ile | Val | Ser | Tyr | Ala | Leu | Met | Ser | Val | Cys | Gly |  |
|     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |  |
| Ala | Ile | Leu | Leu | Val | Leu | Ile | Val | Leu | Leu | Leu | Leu | Pro | Phe | Arg |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |  |
| Cys | Gln | Arg | Arg | Pro | Arg | Asp | Pro | Glu | Val | Val | Asn | Asp | Glu | Ser |  |
|     |     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |  |
| Ser | Leu | Val | Arg | His | Arg | Trp | Lys |     |     |     |     |     |     |     |  |
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<210> 204

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<211> 377

<212> PRT

<213> Homo sapiens

<400> 206

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Ala | Leu | Leu | Leu | Gly | Ala | Gly | Leu | Leu | Leu | Gly | Ala | Tyr |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |
| Val | Leu | Val | Tyr | Tyr | Asn | Leu | Val | Lys | Ala | Pro | Pro | Cys | Gly | Gly |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |
| Met | Gly | Asn | Leu | Arg | Gly | Arg | Thr | Ala | Val | Val | Thr | Gly | Ala | Asn |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |
| Ser | Gly | Ile | Gly | Lys | Met | Thr | Ala | Leu | Glu | Leu | Ala | Arg | Arg | Gly |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |
| Ala | Arg | Val | Val | Leu | Ala | Cys | Arg | Ser | Gln | Glu | Arg | Gly | Glu | Ala |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ala | Ala | Phe | Asp | Leu | Arg | Gln | Glu | Ser | Gly | Asn | Asn | Glu | Val | Ile |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |  |
| Phe | Met | Ala | Leu | Asp | Leu | Ala | Ser | Leu | Ala | Ser | Val | Arg | Ala | Phe |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |  |
| Ala | Thr | Ala | Phe | Leu | Ser | Ser | Glu | Pro | Arg | Leu | Asp | Ile | Leu | Ile |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |  |
| His | Asn | Ala | Gly | Ile | Ser | Ser | Cys | Gly | Arg | Thr | Arg | Glu | Ala | Phe |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |
| Asn | Leu | Leu | Leu | Arg | Val | Asn | His | Ile | Gly | Pro | Phe | Leu | Leu | Thr |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |
| His | Leu | Leu | Leu | Pro | Cys | Leu | Lys | Ala | Cys | Ala | Pro | Ser | Arg | Val |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |
| Val | Val | Val | Ala | Ser | Ala | Ala | His | Cys | Arg | Gly | Arg | Leu | Asp | Phe |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |
| Lys | Arg | Leu | Asp | Arg | Pro | Val | Val | Gly | Trp | Arg | Gln | Glu | Leu | Arg |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |
| Ala | Tyr | Ala | Asp | Thr | Lys | Leu | Ala | Asn | Val | Leu | Phe | Ala | Arg | Glu |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| Leu | Ala | Asn | Gln | Leu | Glu | Ala | Thr | Gly | Val | Thr | Cys | Tyr | Ala | Ala |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| His | Pro | Gly | Pro | Val | Asn | Ser | Glu | Leu | Phe | Leu | Arg | His | Val | Pro |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Gly | Trp | Leu | Arg | Pro | Leu | Leu | Arg | Pro | Leu | Ala | Trp | Leu | Val | Leu |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |
| Arg | Ala | Pro | Arg | Gly | Gly | Ala | Gln | Thr | Pro | Leu | Tyr | Cys | Ala | Leu |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |
| Gln | Glu | Gly | Ile | Glu | Pro | Leu | Ser | Gly | Arg | Tyr | Phe | Ala | Asn | Cys |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |
| His | Val | Glu | Glu | Val | Pro | Pro | Ala | Ala | Arg | Asp | Asp | Arg | Ala | Ala |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |
| His | Arg | Leu | Trp | Glu | Ala | Ser | Lys | Arg | Leu | Ala | Gly | Leu | Gly | Pro |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |  |
| Gly | Glu | Asp | Ala | Glu | Pro | Asp | Glu | Asp | Pro | Gln | Ser | Glu | Asp | Ser |  |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |  |
| Glu | Ala | Pro | Ser | Ser | Leu | Ser | Thr | Pro | His | Pro | Glu | Glu | Pro | Thr |  |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |  |
| Val | Ser | Gln | Pro | Tyr | Pro | Ser | Pro | Gln | Ser | Ser | Pro | Asp | Leu | Ser |  |
|     |     |     |     | 350 |     |     |     |     | 355 |     |     |     |     | 360 |  |

Lys Met Thr His Arg Ile Gln Ala Lys Val Glu Pro Glu Ile Gln  
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Leu Ser

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<211> 985

<212> PRT

<213> Homo sapiens

<400> 211

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Gly | Met | Ala | Gln | Asp | Ser | Pro | Pro | Gln | Ile | Leu | Val | His |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |
| Pro | Gln | Asp | Gln | Leu | Phe | Gln | Gly | Pro | Gly | Pro | Ala | Arg | Met | Ser |
|     |     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |
| Cys | Gln | Ala | Ser | Gly | Gln | Pro | Pro | Pro | Thr | Ile | Arg | Trp | Leu | Leu |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |
| Asn | Gly | Gln | Pro | Leu | Ser | Met | Val | Pro | Pro | Asp | Pro | His | His | Leu |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |
| Leu | Pro | Asp | Gly | Thr | Leu | Leu | Leu | Leu | Gln | Pro | Pro | Ala | Arg | Gly |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |
| His | Ala | His | Asp | Gly | Gln | Ala | Leu | Ser | Thr | Asp | Leu | Gly | Val | Tyr |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |
| Thr | Cys | Glu | Ala | Ser | Asn | Arg | Leu | Gly | Thr | Ala | Val | Ser | Arg | Gly |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |
| Ala | Arg | Leu | Ser | Val | Ala | Val | Leu | Arg | Glu | Asp | Phe | Gln | Ile | Gln |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |
| Pro | Arg | Asp | Met | Val | Ala | Val | Val | Gly | Glu | Gln | Phe | Thr | Leu | Glu |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |

|   |     |     |     |
|---|-----|-----|-----|
| Cys Gly Pro Pro Trp Gly His Pro Glu Pro Thr Val Ser Trp Trp | 140 | 145 | 150 |
| Lys Asp Gly Lys Pro Leu Ala Leu Gln Pro Gly Arg His Thr Val | 155 | 160 | 165 |
| Ser Gly Gly Ser Leu Leu Met Ala Arg Ala Glu Lys Ser Asp Glu | 170 | 175 | 180 |
| Gly Thr Tyr Met Cys Val Ala Thr Asn Ser Ala Gly His Arg Glu | 185 | 190 | 195 |
| Ser Arg Ala Ala Arg Val Ser Ile Gln Glu Pro Gln Asp Tyr Thr | 200 | 205 | 210 |
| Glu Pro Val Glu Leu Leu Ala Val Arg Ile Gln Leu Glu Asn Val | 215 | 220 | 225 |
| Thr Leu Leu Asn Pro Asp Pro Ala Glu Gly Pro Lys Pro Arg Pro | 230 | 235 | 240 |
| Ala Val Trp Leu Ser Trp Lys Val Ser Gly Pro Ala Ala Pro Ala | 245 | 250 | 255 |
| Gln Ser Tyr Thr Ala Leu Phe Arg Thr Gln Thr Ala Pro Gly Gly | 260 | 265 | 270 |
| Gln Gly Ala Pro Trp Ala Glu Glu Leu Leu Ala Gly Trp Gln Ser | 275 | 280 | 285 |
| Ala Glu Leu Gly Gly Leu His Trp Gly Gln Asp Tyr Glu Phe Lys | 290 | 295 | 300 |
| Val Arg Pro Ser Ser Gly Arg Ala Arg Gly Pro Asp Ser Asn Val | 305 | 310 | 315 |
| Leu Leu Leu Arg Leu Pro Glu Lys Val Pro Ser Ala Pro Pro Gln | 320 | 325 | 330 |
| Glu Val Thr Leu Lys Pro Gly Asn Gly Thr Val Phe Val Ser Trp | 335 | 340 | 345 |
| Val Pro Pro Pro Ala Glu Asn His Asn Gly Ile Ile Arg Gly Tyr | 350 | 355 | 360 |
| Gln Val Trp Ser Leu Gly Asn Thr Ser Leu Pro Pro Ala Asn Trp | 365 | 370 | 375 |
| Thr Val Val Gly Glu Gln Thr Gln Leu Glu Ile Ala Thr His Met | 380 | 385 | 390 |
| Pro Gly Ser Tyr Cys Val Gln Val Ala Ala Val Thr Gly Ala Gly | 395 | 400 | 405 |
| Ala Gly Glu Pro Ser Arg Pro Val Cys Leu Leu Leu Glu Gln Ala | 410 | 415 | 420 |

|   |     |     |     |
|---|-----|-----|-----|
| Met Glu Arg Ala Thr Gln Glu Pro Ser Glu His Gly Pro Trp Thr | 425 | 430 | 435 |
| Leu Glu Gln Leu Arg Ala Thr Leu Lys Arg Pro Glu Val Ile Ala | 440 | 445 | 450 |
| Thr Cys Gly Val Ala Leu Trp Leu Leu Leu Leu Gly Thr Ala Val | 455 | 460 | 465 |
| Cys Ile His Arg Arg Arg Arg Ala Arg Val His Leu Gly Pro Gly | 470 | 475 | 480 |
| Leu Tyr Arg Tyr Thr Ser Glu Asp Ala Ile Leu Lys His Arg Met | 485 | 490 | 495 |
| Asp His Ser Asp Ser Gln Trp Leu Ala Asp Thr Trp Arg Ser Thr | 500 | 505 | 510 |
| Ser Gly Ser Arg Asp Leu Ser Ser Ser Ser Ser Leu Ser Ser Arg | 515 | 520 | 525 |
| Leu Gly Ala Asp Ala Arg Asp Pro Leu Asp Cys Arg Arg Ser Leu | 530 | 535 | 540 |
| Leu Ser Trp Asp Ser Arg Ser Pro Gly Val Pro Leu Leu Pro Asp | 545 | 550 | 555 |
| Thr Ser Thr Phe Tyr Gly Ser Leu Ile Ala Glu Leu Pro Ser Ser | 560 | 565 | 570 |
| Thr Pro Ala Arg Pro Ser Pro Gln Val Pro Ala Val Arg Arg Leu | 575 | 580 | 585 |
| Pro Pro Gln Leu Ala Gln Leu Ser Ser Pro Cys Ser Ser Ser Asp | 590 | 595 | 600 |
| Ser Leu Cys Ser Arg Arg Gly Leu Ser Ser Pro Arg Leu Ser Leu | 605 | 610 | 615 |
| Ala Pro Ala Glu Ala Trp Lys Ala Lys Lys Lys Gln Glu Leu Gln | 620 | 625 | 630 |
| His Ala Asn Ser Ser Pro Leu Leu Arg Gly Ser His Ser Leu Glu | 635 | 640 | 645 |
| Leu Arg Ala Cys Glu Leu Gly Asn Arg Gly Ser Lys Asn Leu Ser | 650 | 655 | 660 |
| Gln Ser Pro Gly Ala Val Pro Gln Ala Leu Val Ala Trp Arg Ala | 665 | 670 | 675 |
| Leu Gly Pro Lys Leu Leu Ser Ser Ser Asn Glu Leu Val Thr Arg | 680 | 685 | 690 |
| His Leu Pro Pro Ala Pro Leu Phe Pro His Glu Thr Pro Pro Thr | 695 | 700 | 705 |

Gln Ser Gln Gln Thr Gln Pro Pro Val Ala Pro Gln Ala Pro Ser  
 710 715 720  
 Ser Ile Leu Leu Pro Ala Ala Pro Ile Pro Ile Leu Ser Pro Cys  
 725 730 735  
 Ser Pro Pro Ser Pro Gln Ala Ser Ser Leu Ser Gly Pro Ser Pro  
 740 745 750  
 Ala Ser Ser Arg Leu Ser Ser Ser Ser Leu Ser Ser Leu Gly Glu  
 755 760 765  
 Asp Gln Asp Ser Val Leu Thr Pro Glu Glu Val Ala Leu Cys Leu  
 770 775 780  
 Glu Leu Ser Glu Gly Glu Glu Thr Pro Arg Asn Ser Val Ser Pro  
 785 790 795  
 Met Pro Arg Ala Pro Ser Pro Pro Thr Thr Tyr Gly Tyr Ile Ser  
 800 805 810  
 Val Pro Thr Ala Ser Glu Phe Thr Asp Met Gly Arg Thr Gly Gly  
 815 820 825  
 Gly Val Gly Pro Lys Gly Gly Val Leu Leu Cys Pro Pro Arg Pro  
 830 835 840  
 Cys Leu Thr Pro Thr Pro Ser Glu Gly Ser Leu Ala Asn Gly Trp  
 845 850 855  
 Gly Ser Ala Ser Glu Asp Asn Ala Ala Ser Ala Arg Ala Ser Leu  
 860 865 870  
 Val Ser Ser Ser Asp Gly Ser Phe Leu Ala Asp Ala His Phe Ala  
 875 880 885  
 Arg Ala Leu Ala Val Ala Val Asp Ser Phe Gly Phe Gly Leu Glu  
 890 895 900  
 Pro Arg Glu Ala Asp Cys Val Phe Ile Asp Ala Ser Ser Pro Pro  
 905 910 915  
 Ser Pro Arg Asp Glu Ile Phe Leu Thr Pro Asn Leu Ser Leu Pro  
 920 925 930  
 Leu Trp Glu Trp Arg Pro Asp Trp Leu Glu Asp Met Glu Val Ser  
 935 940 945  
 His Thr Gln Arg Leu Gly Arg Gly Met Pro Pro Trp Pro Pro Asp  
 950 955 960  
 Ser Gln Ile Ser Ser Gln Arg Ser Gln Leu His Cys Arg Met Pro  
 965 970 975  
 Lys Ala Gly Ala Ser Pro Val Asp Tyr Ser  
 980 985

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<220>  
<223> Synthetic oligonucleotide probe

<400> 212  
gaagggacct acatgtgtgt ggcc 24

<210> 213  
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<220>  
<223> Synthetic oligonucleotide probe

<400> 213  
actgaccttc cagctgagcc acac 24

<210> 214  
<211> 50  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 214  
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<210> 215  
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<220>  
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<222> 1869, 1887  
<223> unknown base

<400> 215  
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tcgctgctct ggcaccatct atgcagaaga agaaggccag gagacaatga 250  
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<210> 216

<211> 332

<212> PRT

<213> Homo sapiens

<400> 216

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Leu | Leu | Val | Leu | Leu | Trp | Gly | Cys | Leu | Leu | Leu | Pro | Gly |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Tyr | Glu | Ala | Leu | Glu | Gly | Pro | Glu | Glu | Ile | Ser | Gly | Phe | Glu | Gly |
|     |     |     |     | 20  |     |     |     | 25  |     |     |     |     | 30  |     |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Asp | Thr | Val | Ser | Leu | Gln | Cys | Thr | Tyr | Arg | Glu | Glu | Leu | Arg | Asp |
|     |     |     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| His | Arg | Lys | Tyr | Trp | Cys | Arg | Lys | Gly | Gly | Ile | Leu | Phe | Ser | Arg |

| 50      |     |     |     |     |     |     |     |     |     | 55  |     |     |     |     | 60  |  |  |  |  |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Cys     | Ser | Gly | Thr | Ile | Tyr | Ala | Glu | Glu | Glu | Gly | Gln | Glu | Thr | Met |     |  |  |  |  |
| 65      |     |     |     |     |     |     |     |     |     | 70  |     |     |     |     | 75  |  |  |  |  |
| Lys     | Gly | Arg | Val | Ser | Ile | Arg | Asp | Ser | Arg | Gln | Glu | Leu | Ser | Leu |     |  |  |  |  |
| 80      |     |     |     |     |     |     |     |     |     | 85  |     |     |     |     | 90  |  |  |  |  |
| Ile     | Val | Thr | Leu | Trp | Asn | Leu | Thr | Leu | Gln | Asp | Ala | Gly | Glu | Tyr |     |  |  |  |  |
| 95      |     |     |     |     |     |     |     |     |     | 100 |     |     |     |     | 105 |  |  |  |  |
| Trp     | Cys | Gly | Val | Glu | Lys | Arg | Gly | Pro | Asp | Glu | Ser | Leu | Leu | Ile |     |  |  |  |  |
| 110     |     |     |     |     |     |     |     |     |     | 115 |     |     |     |     | 120 |  |  |  |  |
| Ser     | Leu | Phe | Val | Phe | Pro | Gly | Pro | Cys | Cys | Pro | Pro | Ser | Pro | Ser |     |  |  |  |  |
| 125     |     |     |     |     |     |     |     |     |     | 130 |     |     |     |     | 135 |  |  |  |  |
| Pro     | Thr | Phe | Gln | Pro | Leu | Ala | Thr | Thr | Arg | Leu | Gln | Pro | Lys | Ala |     |  |  |  |  |
| 140     |     |     |     |     |     |     |     |     |     | 145 |     |     |     |     | 150 |  |  |  |  |
| Lys     | Ala | Gln | Gln | Thr | Gln | Pro | Pro | Gly | Leu | Thr | Ser | Pro | Gly | Leu |     |  |  |  |  |
| 155     |     |     |     |     |     |     |     |     |     | 160 |     |     |     |     | 165 |  |  |  |  |
| Tyr     | Pro | Ala | Ala | Thr | Thr | Ala | Lys | Gln | Gly | Lys | Thr | Gly | Ala | Glu |     |  |  |  |  |
| 170     |     |     |     |     |     |     |     |     |     | 175 |     |     |     |     | 180 |  |  |  |  |
| Ala     | Pro | Pro | Leu | Pro | Gly | Thr | Ser | Gln | Tyr | Gly | His | Glu | Arg | Thr |     |  |  |  |  |
| 185     |     |     |     |     |     |     |     |     |     | 190 |     |     |     |     | 195 |  |  |  |  |
| Ser     | Gln | Tyr | Thr | Gly | Thr | Ser | Pro | His | Pro | Ala | Thr | Ser | Pro | Pro |     |  |  |  |  |
| 200     |     |     |     |     |     |     |     |     |     | 205 |     |     |     |     | 210 |  |  |  |  |
| Ala     | Gly | Ser | Ser | Arg | Pro | Pro | Met | Gln | Leu | Asp | Ser | Thr | Ser | Ala |     |  |  |  |  |
| 215     |     |     |     |     |     |     |     |     |     | 220 |     |     |     |     | 225 |  |  |  |  |
| Glu     | Asp | Thr | Ser | Pro | Ala | Leu | Ser | Ser | Gly | Ser | Ser | Lys | Pro | Arg |     |  |  |  |  |
| 230     |     |     |     |     |     |     |     |     |     | 235 |     |     |     |     | 240 |  |  |  |  |
| Val     | Ser | Ile | Pro | Met | Val | Arg | Ile | Leu | Ala | Pro | Val | Leu | Val | Leu |     |  |  |  |  |
| 245     |     |     |     |     |     |     |     |     |     | 250 |     |     |     |     | 255 |  |  |  |  |
| Leu     | Ser | Leu | Leu | Ser | Ala | Ala | Gly | Leu | Ile | Ala | Phe | Cys | Ser | His |     |  |  |  |  |
| 260     |     |     |     |     |     |     |     |     |     | 265 |     |     |     |     | 270 |  |  |  |  |
| Leu     | Leu | Leu | Trp | Arg | Lys | Glu | Ala | Gln | Gln | Ala | Thr | Glu | Thr | Gln |     |  |  |  |  |
| 275     |     |     |     |     |     |     |     |     |     | 280 |     |     |     |     | 285 |  |  |  |  |
| Arg     | Asn | Glu | Lys | Phe | Trp | Leu | Ser | Arg | Leu | Thr | Ala | Glu | Glu | Lys |     |  |  |  |  |
| 290     |     |     |     |     |     |     |     |     |     | 295 |     |     |     |     | 300 |  |  |  |  |
| Glu     | Ala | Pro | Ser | Gln | Ala | Pro | Glu | Gly | Asp | Val | Ile | Ser | Met | Pro |     |  |  |  |  |
| 305     |     |     |     |     |     |     |     |     |     | 310 |     |     |     |     | 315 |  |  |  |  |
| Pro     | Leu | His | Thr | Ser | Glu | Glu | Glu | Leu | Gly | Phe | Ser | Lys | Phe | Val |     |  |  |  |  |
| 320     |     |     |     |     |     |     |     |     |     | 325 |     |     |     |     | 330 |  |  |  |  |
| Ser Ala |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |  |



<210> 217  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 217  
ccctgcagtg cacctacagg gaag 24

<210> 218  
<211> 24  
<212> DNA  
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<220>  
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<400> 218  
ctgtcttccc ctgcttggct gtgg 24

<210> 219  
<211> 47  
<212> DNA  
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<220>  
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<400> 219  
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<210> 220  
<211> 950  
<212> DNA  
<213> Homo sapiens

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 ggctgatggg agcaccaaca acgggatctt ccagatcaac agccggaggt 650  
 ggtgcagcaa cctcaccctg aacgtcccca acgtgtgccg gatgtactgc 700  
 tcagatttgt tgaatcctaa tctcaaggat accgttatct gtgccatgaa 750  
 gataacccaa gagcctcagg gtctgggtta ctgggaggcc tggaggcatc 800  
 actgccaggg aaaagacctc actgaatggg tggatggctg tgacttctag 850  
 gatggacgga accatgcaca gcaggctggg aaatgtggtt tggttcctga 900  
 cctaggcttg ggaagacaag ccagcgaata aaggatggtt gaacgtgaaa 950

<210> 221

<211> 146

<212> PRT

<213> Homo sapiens

<400> 221

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Leu | Ala | Leu | Val | Cys | Leu | Leu | Ser | Cys | Leu | Leu | Pro | Ser | 15  |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     |     |     |
| Ser | Glu | Ala | Lys | Leu | Tyr | Gly | Arg | Cys | Glu | Leu | Ala | Arg | Val | Leu | 30  |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     |     |     |
| His | Asp | Phe | Gly | Leu | Asp | Gly | Tyr | Arg | Gly | Tyr | Ser | Leu | Ala | Asp | 45  |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     |     |     |
| Trp | Val | Cys | Leu | Ala | Tyr | Phe | Thr | Ser | Gly | Phe | Asn | Ala | Ala | Ala | 60  |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     |     |     |
| Leu | Asp | Tyr | Glu | Ala | Asp | Gly | Ser | Thr | Asn | Asn | Gly | Ile | Phe | Gln | 75  |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     |     |     |
| Ile | Asn | Ser | Arg | Arg | Trp | Cys | Ser | Asn | Leu | Thr | Pro | Asn | Val | Pro | 90  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     |     |     |
| Asn | Val | Cys | Arg | Met | Tyr | Cys | Ser | Asp | Leu | Leu | Asn | Pro | Asn | Leu | 105 |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     |     |     |
| Lys | Asp | Thr | Val | Ile | Cys | Ala | Met | Lys | Ile | Thr | Gln | Glu | Pro | Gln | 120 |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     |     |     |
| Gly | Leu | Gly | Tyr | Trp | Glu | Ala | Trp | Arg | His | His | Cys | Gln | Gly | Lys | 135 |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     |     |     |
| Asp | Leu | Thr | Glu | Trp | Val | Asp | Gly | Cys | Asp | Phe |     |     |     |     |     |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     |     |     |

<210> 222  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 222  
gggatcatgt tgttggccct ggtc 24

<210> 223  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 223  
gcaaggcaga ccagtcagc cag 23

<210> 224  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 224  
ctgcctgcta ccctccaagt gaggccaagc tctacggtcg ttgtg 45

<210> 225  
<211> 2049  
<212> DNA  
<213> Homo sapiens

<400> 225  
agccgctgcc ccgggccggg cgcccgcggc ggcacatga gtccccgctc 50  
gtgcctgcgt tcgctgcgcc tctcgtctt cgccgtcttc tcagccgccg 100  
cgagcaactg gctgtacctg gccaaagtgt cgtcgggtggg gagcatctca 150  
gaggaggaga cgtgcgagaa actcaagggc ctgatccaga ggcaggtgca 200  
gatgtgcaag cggaacctgg aagtcattga ctccgtgcgc cgcggtgccc 250  
agctggccat tgaggagtgc cagtaccagt tccggaaccg gcgctggaac 300  
tgctccacac tcgactcctt gcccgctctc ggcaaggtgg tgacgcaagg 350  
gactcgggag gcggccttcg tgtacgccat ctcttcggca ggtgtggcct 400  
ttgcagtgc gcgggcgtgc agcagtggg agctggagaa gtgcggctgt 450

gacaggacag tgcatggggt cagcccacag ggcttccagt ggtcaggatg 500  
ctctgacaac atcgccctacg gtgtggcctt ctcacagtcg tttgtggatg 550  
tgcgggagag aagcaagggg gcctcgtcca gcagagccct catgaacctc 600  
cacaacaatg aggccggcag gaaggccatc ctgacacaca tgcgggtgga 650  
atgcaagtgc cacggggtgt caggctcctg tgaggtaaag acgtgctggc 700  
gagccgtgcc gcccttccgc cagggtgggtc acgcactgaa ggagaagttt 750  
gatggtgcca ctgaggtgga gccacgccgc gtgggctcct ccagggcact 800  
ggtaccacgc aacgcacagt tcaagccgca cacagatgag gacctggtgt 850  
acttgagacc tagccccgac ttctgtgagc aggacatgcg cagcggcgtg 900  
ctgggcacga ggggcccgcac atgcaacaag acgtccaagg ccatcgacgg 950  
ctgtgagctg ctgtgctgtg gccgcggctt ccacacggcg cagggtggagc 1000  
tggtgaacg ctgcagctgc aaattccact ggtgctgctt cgtcaagtgc 1050  
cggcagtgcc agcggctcgt ggagttgcac acgtgccgat gaccgcctgc 1100  
ctagccctgc gccggcaacc acctagtggc ccagggaagg ccgataattt 1150  
aaacagtctc ccaccaccta cccaagaga tactggttgt attttttgtt 1200  
ctggtttggt ttttgggtcc tcatgttatt tattgccgaa accaggcagg 1250  
caacccaag ggcaccaacc agggcctccc caaagcctgg gcctttgtgg 1300  
ctgccactga ccaaagggac cttgctcgtg ccgctggctg cccgcatgtg 1350  
gctgccactg accactcagt tgttatctgt gtccgttttt ctacttgcag 1400  
acctaaagtg gagtaacaag gagtattacc accacatggc tactgaccgt 1450  
gtcatcgggg aagagggggc cttatggcag ggaaaatagg taccgacttg 1500  
atggaagtca caccctctgg aaaaaagaac tcttaactct ccagcacaca 1550  
tacacatgga ctctggcag cttgagccta gaagccatgt ctctcaaatg 1600  
ccctgagaaa gggaacaagc agataccagg tcaagggcac caggttcatt 1650  
tcagccctta catggacagc tagaggttcg atatctgtgg gtccttccag 1700  
gcaagaagag ggagatgaga gcaagagacg actgaagtcc caccctagaa 1750  
cccagcctgc cccagcctgc ccctgggaag aggaaactta accactcccc 1800  
agaccacact aggcaggcat ataggctgcc atcctggacc agggatcccc 1850

gctgtgcctt tgcagtcacg cccgagtcac ctttcacagc gctgttcctc 1900  
catgaaactg aaaaacacac acacacacac acacacacac acacacacac 1950  
acacacacac ggacacacac acacacctgc gagagagagg gaggaagg 2000  
ctgtgccttt gcagtcacgc ccgagtcacc tttcacagca ctgttcctc 2049

<210> 226  
<211> 351  
<212> PRT  
<213> Homo sapiens

<400> 226

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ser | Pro | Arg | Ser | Cys | Leu | Arg | Ser | Leu | Arg | Leu | Leu | Val | Phe | 1   | 5   | 10  | 15 |
| Ala | Val | Phe | Ser | Ala | Ala | Ala | Ser | Asn | Trp | Leu | Tyr | Leu | Ala | Lys | 20  | 25  | 30  |    |
| Leu | Ser | Ser | Val | Gly | Ser | Ile | Ser | Glu | Glu | Glu | Thr | Cys | Glu | Lys | 35  | 40  | 45  |    |
| Leu | Lys | Gly | Leu | Ile | Gln | Arg | Gln | Val | Gln | Met | Cys | Lys | Arg | Asn | 50  | 55  | 60  |    |
| Leu | Glu | Val | Met | Asp | Ser | Val | Arg | Arg | Gly | Ala | Gln | Leu | Ala | Ile | 65  | 70  | 75  |    |
| Glu | Glu | Cys | Gln | Tyr | Gln | Phe | Arg | Asn | Arg | Arg | Trp | Asn | Cys | Ser | 80  | 85  | 90  |    |
| Thr | Leu | Asp | Ser | Leu | Pro | Val | Phe | Gly | Lys | Val | Val | Thr | Gln | Gly | 95  | 100 | 105 |    |
| Thr | Arg | Glu | Ala | Ala | Phe | Val | Tyr | Ala | Ile | Ser | Ser | Ala | Gly | Val | 110 | 115 | 120 |    |
| Ala | Phe | Ala | Val | Thr | Arg | Ala | Cys | Ser | Ser | Gly | Glu | Leu | Glu | Lys | 125 | 130 | 135 |    |
| Cys | Gly | Cys | Asp | Arg | Thr | Val | His | Gly | Val | Ser | Pro | Gln | Gly | Phe | 140 | 145 | 150 |    |
| Gln | Trp | Ser | Gly | Cys | Ser | Asp | Asn | Ile | Ala | Tyr | Gly | Val | Ala | Phe | 155 | 160 | 165 |    |
| Ser | Gln | Ser | Phe | Val | Asp | Val | Arg | Glu | Arg | Ser | Lys | Gly | Ala | Ser | 170 | 175 | 180 |    |
| Ser | Ser | Arg | Ala | Leu | Met | Asn | Leu | His | Asn | Asn | Glu | Ala | Gly | Arg | 185 | 190 | 195 |    |
| Lys | Ala | Ile | Leu | Thr | His | Met | Arg | Val | Glu | Cys | Lys | Cys | His | Gly | 200 | 205 | 210 |    |
| Val | Ser | Gly | Ser | Cys | Glu | Val | Lys | Thr | Cys | Trp | Arg | Ala | Val | Pro |     |     |     |    |

|   |     |  |     |  |     |
|---|-----|--|-----|--|-----|
|   | 215 |  | 220 |  | 225 |
| Pro Phe Arg Gln Val Gly His Ala Leu Lys Glu Lys Phe Asp Gly |     |  |     |  |     |
|   | 230 |  | 235 |  | 240 |
| Ala Thr Glu Val Glu Pro Arg Arg Val Gly Ser Ser Arg Ala Leu |     |  |     |  |     |
|   | 245 |  | 250 |  | 255 |
| Val Pro Arg Asn Ala Gln Phe Lys Pro His Thr Asp Glu Asp Leu |     |  |     |  |     |
|   | 260 |  | 265 |  | 270 |
| Val Tyr Leu Glu Pro Ser Pro Asp Phe Cys Glu Gln Asp Met Arg |     |  |     |  |     |
|   | 275 |  | 280 |  | 285 |
| Ser Gly Val Leu Gly Thr Arg Gly Arg Thr Cys Asn Lys Thr Ser |     |  |     |  |     |
|   | 290 |  | 295 |  | 300 |
| Lys Ala Ile Asp Gly Cys Glu Leu Leu Cys Cys Gly Arg Gly Phe |     |  |     |  |     |
|   | 305 |  | 310 |  | 315 |
| His Thr Ala Gln Val Glu Leu Ala Glu Arg Cys Ser Cys Lys Phe |     |  |     |  |     |
|   | 320 |  | 325 |  | 330 |
| His Trp Cys Cys Phe Val Lys Cys Arg Gln Cys Gln Arg Leu Val |     |  |     |  |     |
|   | 335 |  | 340 |  | 345 |
| Glu Leu His Thr Cys Arg                                     |     |  |     |  |     |
|   | 350 |  |     |  |     |

<210> 227  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 227  
 gctgcagctg caaattccac tgg 23

<210> 228  
 <211> 28  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 228  
 tgggtgggaga ctgtttaaat tatcggcc 28

<210> 229  
 <211> 41  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 229

tgcttcgtca agtgccggca gtgccagcgg ctcgaggagt t 41

<210> 230

<211> 1355

<212> DNA

<213> Homo sapiens

<400> 230

cgacgcgtg ggcggacgcg tgggcggacg cgtgggcgga cgcgtgggct 50  
gggtgcctgc atcgccatgg acaccaccag gtacagcaag tggggcggca 100  
gctccgagga ggtccccgga gggccctggg gacgctgggt gcactggagc 150  
aggagacccc tcttcttggc cctggctgtc ctggtcacca cagtcctttg 200  
ggctgtgatt ctgagtatcc tattgtccaa ggcctccacg gagcgcgcgg 250  
cgctgcttga cggccacgac ctgctgagga caaacgcctc gaagcagacg 300  
gcggcgctgg gtgccctgaa ggaggaggtc ggagactgcc acagctgctg 350  
ctcggggacg caggcgcagc tgcagaccac gcgcgcggag cttggggagg 400  
cgcaggcgaa gctgatggag caggagagcg ccctgcggga actgctgag 450  
cgcgtgaccc agggcttggc tgaagccggc aggggccgtg aggacgtccg 500  
cactgagctg ttccgggcgc tggaggccgt gaggctccag aacaactcct 550  
gcgagccgtg cccacgctg tggctgtcct tcgagggtc ctgctacttt 600  
ttctctgtgc caaagacgac gtgggcggcg gcgcaggatc actgcgcaga 650  
tgccagcgcg cacctgggtga tcgttggggg cctggatgag cagggttcc 700  
tcaactcgaa cagcgtggc cgtgggttact ggctgggcct gagggtgtg 750  
cgccatctgg gcaaggttca gggctaccag tgggtggacg gactctctct 800  
cagcttcagc cactggaacc agggagagcc caatgacgct tgggggcgcg 850  
agaactgtgt catgatgctg cacacggggc tgtggaacga cgcaccgtgt 900  
gacagcgaga aggacggctg gatctgtgag aaaaggcaca actgctgacc 950  
ccgcccagtg ccctggagcc gcgcccattg cagcatgtcg taccctgggg 1000  
gctgtcacc tccctggctc ctggagctga ttgcaaaga gttttttct 1050  
tcctcatcca ccgtgtgtga gtctcagaaa cacttgcccc aacatagccc 1100  
tgtccagccc agtgccctggg ctctgggacc tccatgccga cctcatccta 1150

actccactca cgcagaccca acctaacctc cactagctcc aaaatccctg 1200  
 ctctgcgctc cccgtgatat gcctccactt ctctccctaa ccaagggttag 1250  
 gtgactgagg actggagctg ttgggttttc tcgcattttc caccaaactg 1300  
 gaagctgttt ttgcagcctg aggaagcatc aataaatatt tgagaaatga 1350  
 aaaaa 1355

<210> 231  
 <211> 293  
 <212> PRT  
 <213> Homo sapiens

<400> 231  
 Met Asp Thr Thr Arg Tyr Ser Lys Trp Gly Gly Ser Ser Glu Glu  
           1                  5                  10                  15  
 Val Pro Gly Gly Pro Trp Gly Arg Trp Val His Trp Ser Arg Arg  
                   20                  25                  30  
 Pro Leu Phe Leu Ala Leu Ala Val Leu Val Thr Thr Val Leu Trp  
                   35                  40                  45  
 Ala Val Ile Leu Ser Ile Leu Leu Ser Lys Ala Ser Thr Glu Arg  
                   50                  55                  60  
 Ala Ala Leu Leu Asp Gly His Asp Leu Leu Arg Thr Asn Ala Ser  
                   65                  70                  75  
 Lys Gln Thr Ala Ala Leu Gly Ala Leu Lys Glu Glu Val Gly Asp  
                   80                  85                  90  
 Cys His Ser Cys Cys Ser Gly Thr Gln Ala Gln Leu Gln Thr Thr  
                   95                  100                  105  
 Arg Ala Glu Leu Gly Glu Ala Gln Ala Lys Leu Met Glu Gln Glu  
                   110                  115                  120  
 Ser Ala Leu Arg Glu Leu Arg Glu Arg Val Thr Gln Gly Leu Ala  
                   125                  130                  135  
 Glu Ala Gly Arg Gly Arg Glu Asp Val Arg Thr Glu Leu Phe Arg  
                   140                  145                  150  
 Ala Leu Glu Ala Val Arg Leu Gln Asn Asn Ser Cys Glu Pro Cys  
                   155                  160                  165  
 Pro Thr Ser Trp Leu Ser Phe Glu Gly Ser Cys Tyr Phe Phe Ser  
                   170                  175                  180  
 Val Pro Lys Thr Thr Trp Ala Ala Ala Gln Asp His Cys Ala Asp  
                   185                  190                  195  
 Ala Ser Ala His Leu Val Ile Val Gly Gly Leu Asp Glu Gln Gly  
                   200                  205                  210



Phe Leu Thr Arg Asn Thr Arg Gly Arg Gly Tyr Trp Leu Gly Leu  
215 220 225

Arg Ala Val Arg His Leu Gly Lys Val Gln Gly Tyr Gln Trp Val  
230 235 240

Asp Gly Val Ser Leu Ser Phe Ser His Trp Asn Gln Gly Glu Pro  
245 250 255

Asn Asp Ala Trp Gly Arg Glu Asn Cys Val Met Met Leu His Thr  
260 265 270

Gly Leu Trp Asn Asp Ala Pro Cys Asp Ser Glu Lys Asp Gly Trp  
275 280 285

Ile Cys Glu Lys Arg His Asn Cys  
290

<210> 232

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 232

gcgagaactg tgtcatgatg ctgc 24

<210> 233

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 233

gtttctgaga ctcagcagcg gtgg 24

<210> 234

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 234

caccgtgtga cagcgagaag gacggctgga tctgtgagaa aaggcacaac 50

<210> 235

<211> 1847

<212> DNA

<213> Homo sapiens

<400> 235

gccaggggaa gagggatgac cgacccgggg aaggtcgctg ggcagggcga 50  
gttgggaaag cggcagcccc cgccgcccc gcagcccctt ctctccttt 100  
ctcccacgtc ctatctgcct ctcgctggag gccaggccgt gcagcatcga 150  
agacaggagg aactggagcc tcattggccg gcccggggcg ccggcctcgg 200  
gcttaaatag gagctccggg ctctggctgg gacccgaccg ctgccggccg 250  
cgctcccgt gtcctgccg ggtgatggaa aacccagcc cggccgccgc 300  
cctgggcaag gccctctgcg ctctcctcct ggccactctc ggcgcgccg 350  
gccagcctct tgggggagag tccatctgtt ccgccagagc cccggccaaa 400  
tacagcatca ccttcacggg caagtggagc cagacggcct tcccaagca 450  
gtaccccctg ttccgcccc ctgcgcagtg gtcttcgctg ctgggggccg 500  
cgcatagctc cgactacagc atgtggagga agaaccagta cgtcagtaac 550  
gggctgcgcg actttgcgga gcgcggcgag gcctgggcgc tgatgaagga 600  
gatcaggcg gcgggggagg cgctgcagag cgtgcacgag gtgttttcgg 650  
cgccgcctgt cccagcggc accgggcaga cgtcggcgga gctggaggtg 700  
cagcgcaggc actcgctggt ctcgtttgtg gtgcgcatcg tgcccagccc 750  
cgactggttc gtgggcgtgg acagcctgga cctgtgcgac ggggaccgtt 800  
ggcgggaaca ggcggcgctg gacctgtacc cctacgacgc cgggacggac 850  
agcggttca ccttctctc ccccaacttc gccaccatcc cgcaggacac 900  
ggtgaccgag ataacgtcct cctctcccag ccacccggcc aactccttct 950  
actaccgcg gctgaaggcc ctgcctccca tcgccagggt gacactgctg 1000  
cggctgcgac agagccccag ggccttcac cctcccgcc cagtcctgcc 1050  
cagcagggac aatgagattg tagacagcg ctcagttcca gaaacgccgc 1100  
tggactgcga ggtctccctg tggtcgtcct ggggactgtg cggaggccac 1150  
tgtgggaggc tcgggaccaa gagcaggact cgctacgtcc gggtcagcc 1200  
cgccaacaac gggagcccct gccccgagct cgaagaagag gctgagtgcg 1250  
tccctgataa ctgcgtctaa gaccagagcc ccgcagcccc tggggcccc 1300  
cggagccatg ggggtgcggg ggctcctgtg caggctcatg ctgcaggcgg 1350  
ccgagggcac agggggtttc gcgctgctcc tgaccgcggt gaggccgcgc 1400

cgaccatctc tgcactgaag ggccctctgg tggccggcac gggcattggg 1450  
 aaacagcctc ctcctttccc aaccttgctt cttagggggc cccgtgtccc 1500  
 gtctgtctc agcctcctcc tctgcagga taaagtcac cccaaggctc 1550  
 cagctactct aaattatgtc tccttataag ttattgctgc tccaggagat 1600  
 tgtccttcat cgtccagggg cctggctccc acgtggttgc agatacctca 1650  
 gacctggtgc tctaggctgt gctgagccca ctctcccag ggcgcatcca 1700  
 agcggggggc acttgagaag tgaataaatg gggcggtttc ggaagcgtca 1750  
 gtgtttccat gttatggatc tctctgcgtt tgaataaaga ctatctctgt 1800  
 tgctcacaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaa 1847

<210> 236

<211> 331

<212> PRT

<213> Homo sapiens

<400> 236

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Asn | Pro | Ser | Pro | Ala | Ala | Ala | Leu | Gly | Lys | Ala | Leu | Cys |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |
| Ala | Leu | Leu | Leu | Ala | Thr | Leu | Gly | Ala | Ala | Gly | Gln | Pro | Leu | Gly |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |
| Gly | Glu | Ser | Ile | Cys | Ser | Ala | Arg | Ala | Pro | Ala | Lys | Tyr | Ser | Ile |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |
| Thr | Phe | Thr | Gly | Lys | Trp | Ser | Gln | Thr | Ala | Phe | Pro | Lys | Gln | Tyr |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |
| Pro | Leu | Phe | Arg | Pro | Pro | Ala | Gln | Trp | Ser | Ser | Leu | Leu | Gly | Ala |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |
| Ala | His | Ser | Ser | Asp | Tyr | Ser | Met | Trp | Arg | Lys | Asn | Gln | Tyr | Val |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |
| Ser | Asn | Gly | Leu | Arg | Asp | Phe | Ala | Glu | Arg | Gly | Glu | Ala | Trp | Ala |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |
| Leu | Met | Lys | Glu | Ile | Glu | Ala | Ala | Gly | Glu | Ala | Leu | Gln | Ser | Val |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |
| His | Glu | Val | Phe | Ser | Ala | Pro | Ala | Val | Pro | Ser | Gly | Thr | Gly | Gln |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |
| Thr | Ser | Ala | Glu | Leu | Glu | Val | Gln | Arg | Arg | His | Ser | Leu | Val | Ser |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |
| Phe | Val | Val | Arg | Ile | Val | Pro | Ser | Pro | Asp | Trp | Phe | Val | Gly | Val |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Asp | Ser | Leu | Asp | Leu | Cys | Asp | Gly | Asp | Arg | Trp | Arg | Glu | Gln | Ala |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |
| Ala | Leu | Asp | Leu | Tyr | Pro | Tyr | Asp | Ala | Gly | Thr | Asp | Ser | Gly | Phe |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |
| Thr | Phe | Ser | Ser | Pro | Asn | Phe | Ala | Thr | Ile | Pro | Gln | Asp | Thr | Val |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| Thr | Glu | Ile | Thr | Ser | Ser | Ser | Pro | Ser | His | Pro | Ala | Asn | Ser | Phe |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| Tyr | Tyr | Pro | Arg | Leu | Lys | Ala | Leu | Pro | Pro | Ile | Ala | Arg | Val | Thr |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Leu | Leu | Arg | Leu | Arg | Gln | Ser | Pro | Arg | Ala | Phe | Ile | Pro | Pro | Ala |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |
| Pro | Val | Leu | Pro | Ser | Arg | Asp | Asn | Glu | Ile | Val | Asp | Ser | Ala | Ser |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |
| Val | Pro | Glu | Thr | Pro | Leu | Asp | Cys | Glu | Val | Ser | Leu | Trp | Ser | Ser |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |
| Trp | Gly | Leu | Cys | Gly | Gly | His | Cys | Gly | Arg | Leu | Gly | Thr | Lys | Ser |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |
| Arg | Thr | Arg | Tyr | Val | Arg | Val | Gln | Pro | Ala | Asn | Asn | Gly | Ser | Pro |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |  |
| Cys | Pro | Glu | Leu | Glu | Glu | Glu | Ala | Glu | Cys | Val | Pro | Asp | Asn | Cys |  |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |  |

Val

<210> 237

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 237

cagcactgcc aggggaagag gg 22

<210> 238

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 238

caggactcgc tacgtccg 18

<210> 239  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 239  
cagccccttc tcctcctttc tccc 24

<210> 240  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 240  
gcagttatca gggacgcact cagcc 25

<210> 241  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 241  
ccagcgagag gcagatag 18

<210> 242  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 242  
cggtcaccgt gtcctgcggg atg 23

<210> 243  
<211> 42  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 243  
cagccccttc tcctcctttc tcccacgtcc tatctgcctc tc 42

<210> 244

<211> 1894  
<212> DNA  
<213> Homo sapiens

<400> 244  
ggcggcgctcc gtgaggggct cctttgggca ggggtagtgt ttggtgtccc 50  
tgtcttgctg gatattgaca aactgaagct ttcctgcacc actggactta 100  
aggaagagtg tactcgtagg cggacagctt tagtggccgg ccggccgctc 150  
tcatcccccg taaggagcag agtcctttgt actgaccaag atgagcaaca 200  
tctacatcca ggagcctccc acgaatggga aggttttatt gaaaactaca 250  
gctggagata ttgacataga gttgtggtcc aaagaagctc ctaaagcttg 300  
cagaaatfff atccaactff gtttggaagc ttattatgac aataccatff 350  
ttcatagagt tgtgcctggt ttcatagtcc aaggcggaga tcctactggc 400  
acagggagtg gtggagagtc tatctatgga gcgccattca aagatgaatt 450  
tcattcacgg ttgcgtffta atcggagagg actggttgcc atggcaaagt 500  
ctggtttctca tgataatggc agccagttff tcttcacact gggtcgagca 550  
gatgaactta acaataagca taccatctff ggaaaggffa caggggatac 600  
agtatataac atgttgcgac tgtcagaagt agacattgat gatgacgaaa 650  
gaccacataa tccacacaaa ataaaaagct gtgaggttff gtttaatcct 700  
tttgatgaca tcattccaag ggaaattaaa aggctgaaaa aagagaaacc 750  
agaggaggaa gtaaagaaat tgaaacccaa aggcacaaaa aatffftagtt 800  
tactttcatt tggagaggaa gctgaggaag aagaggagga agtaaatcga 850  
gttagtcaga gcatgaaggg caaaagcaaa agtagtcatg acttgcttaa 900  
ggatgatcca catctcagtt ctgttccagt tgtagaaagt gaaaaagggtg 950  
atgcaccaga tttagttgat gatggagaag atgaaagtgc agagcatgat 1000  
gaatatattg atggtgatga aaagaacctg atgagagaaa gaattgcca 1050  
aaaattaaaa aaggacacaa gtgcgaatgt taaatcagct ggagaaggag 1100  
aagtggagaa gaaatcagtc agccgcagtg aagagctcag aaaagaagca 1150  
agacaattaa aacgggaact cttagcagca aaacaaaaaa aagtagaaaa 1200  
tgcagcaaaa caagcagaaa aaagaagtga agaggaagaa gccctccag 1250  
atggtgctgt tgccgaatac agaagagaaa agcaaaagta tgaagctffg 1300

aggaagcaac agtcaaagaa gggaacttcc cggaagatc agacccttgc 1350  
 actgctgaac cagttttaat ctaaactcac tcaagcaatt gctgaaacac 1400  
 ctgaaaatga cattcctgaa acagaagtag aagatgatga aggatggatg 1450  
 tcacatgtac ttcagtttga ggataaaagc agaaaagtga aagatgcaag 1500  
 catgcaagac tcagatacat ttgaaatcta tgatcctcgg aatccagtga 1550  
 ataaaagaag gagggaagaa agcaaaaagc tgatgagaga gaaaaaagaa 1600  
 agaagataaa atgagaataa tgataaccag aacttgctgg aaatgtgcct 1650  
 acaatggcct tgtaacagcc attgttccca acagcatcac ttaggggtgt 1700  
 gaaaagaagt atttttgaac ctgttgtctg gttttgaaaa acaattatct 1750  
 tgttttgcaa attgtggaat gatgtaagca aatgcttttg gttactggta 1800  
 catgtgtttt ttcctagctg accttttata ttgctaaatc tgaaataaaa 1850  
 taactttcct tccacaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 1894

<210> 245  
 <211> 472  
 <212> PRT  
 <213> Homo sapiens

<400> 245  
 Met Ser Asn Ile Tyr Ile Gln Glu Pro Pro Thr Asn Gly Lys Val  
     1                    5                    10                    15  
 Leu Leu Lys Thr Thr Ala Gly Asp Ile Asp Ile Glu Leu Trp Ser  
                     20                    25                    30  
 Lys Glu Ala Pro Lys Ala Cys Arg Asn Phe Ile Gln Leu Cys Leu  
                     35                    40                    45  
 Glu Ala Tyr Tyr Asp Asn Thr Ile Phe His Arg Val Val Pro Gly  
                     50                    55                    60  
 Phe Ile Val Gln Gly Gly Asp Pro Thr Gly Thr Gly Ser Gly Gly  
                     65                    70                    75  
 Glu Ser Ile Tyr Gly Ala Pro Phe Lys Asp Glu Phe His Ser Arg  
                     80                    85                    90  
 Leu Arg Phe Asn Arg Arg Gly Leu Val Ala Met Ala Asn Ala Gly  
                     95                    100                    105  
 Ser His Asp Asn Gly Ser Gln Phe Phe Phe Thr Leu Gly Arg Ala  
                     110                    115                    120  
 Asp Glu Leu Asn Asn Lys His Thr Ile Phe Gly Lys Val Thr Gly  
                     125                    130                    135

|   |     |     |     |
|---|-----|-----|-----|
| Asp Thr Val Tyr Asn Met Leu Arg Leu Ser Glu Val Asp Ile Asp | 140 | 145 | 150 |
| Asp Asp Glu Arg Pro His Asn Pro His Lys Ile Lys Ser Cys Glu | 155 | 160 | 165 |
| Val Leu Phe Asn Pro Phe Asp Asp Ile Ile Pro Arg Glu Ile Lys | 170 | 175 | 180 |
| Arg Leu Lys Lys Glu Lys Pro Glu Glu Glu Val Lys Lys Leu Lys | 185 | 190 | 195 |
| Pro Lys Gly Thr Lys Asn Phe Ser Leu Leu Ser Phe Gly Glu Glu | 200 | 205 | 210 |
| Ala Glu Glu Glu Glu Glu Glu Val Asn Arg Val Ser Gln Ser Met | 215 | 220 | 225 |
| Lys Gly Lys Ser Lys Ser Ser His Asp Leu Leu Lys Asp Asp Pro | 230 | 235 | 240 |
| His Leu Ser Ser Val Pro Val Val Glu Ser Glu Lys Gly Asp Ala | 245 | 250 | 255 |
| Pro Asp Leu Val Asp Asp Gly Glu Asp Glu Ser Ala Glu His Asp | 260 | 265 | 270 |
| Glu Tyr Ile Asp Gly Asp Glu Lys Asn Leu Met Arg Glu Arg Ile | 275 | 280 | 285 |
| Ala Lys Lys Leu Lys Lys Asp Thr Ser Ala Asn Val Lys Ser Ala | 290 | 295 | 300 |
| Gly Glu Gly Glu Val Glu Lys Lys Ser Val Ser Arg Ser Glu Glu | 305 | 310 | 315 |
| Leu Arg Lys Glu Ala Arg Gln Leu Lys Arg Glu Leu Leu Ala Ala | 320 | 325 | 330 |
| Lys Gln Lys Lys Val Glu Asn Ala Ala Lys Gln Ala Glu Lys Arg | 335 | 340 | 345 |
| Ser Glu Glu Glu Glu Ala Pro Pro Asp Gly Ala Val Ala Glu Tyr | 350 | 355 | 360 |
| Arg Arg Glu Lys Gln Lys Tyr Glu Ala Leu Arg Lys Gln Gln Ser | 365 | 370 | 375 |
| Lys Lys Gly Thr Ser Arg Glu Asp Gln Thr Leu Ala Leu Leu Asn | 380 | 385 | 390 |
| Gln Phe Lys Ser Lys Leu Thr Gln Ala Ile Ala Glu Thr Pro Glu | 395 | 400 | 405 |
| Asn Asp Ile Pro Glu Thr Glu Val Glu Asp Asp Glu Gly Trp Met | 410 | 415 | 420 |



Ser His Val Leu Gln Phe Glu Asp Lys Ser Arg Lys Val Lys Asp  
425 430 435

Ala Ser Met Gln Asp Ser Asp Thr Phe Glu Ile Tyr Asp Pro Arg  
440 445 450

Asn Pro Val Asn Lys Arg Arg Arg Glu Glu Ser Lys Lys Leu Met  
455 460 465

Arg Glu Lys Lys Glu Arg Arg  
470

<210> 246

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 246

tgcgagatc ctactggcac aggg 24

<210> 247

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 247

cgagttagtc agagcatg 18

<210> 248

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 248

cagatggtgc tgttgccg 18

<210> 249

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 249

caactggaac aggaactgag atgtggatc 29

<210> 250

<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 250  
ctggttcagc agtgaagg tctg 24

<210> 251  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 251  
cctctccgat taaaacgc 18

<210> 252  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 252  
gagaggactg gttgcatgg caaatgctgg ttctcatgat aatgg 45

<210> 253  
<211> 2456  
<212> DNA  
<213> Homo sapiens

<400> 253  
cgccgccgtt ggggctggaa gttcccgcca ggtccgtgcc gggcgagaga 50  
gatgctgccc ggcccgcctc ggctttgagg cgagagaagt gtcccagacc 100  
catttcgcct tgctgacggc gtcgagccct ggccagacat gtccacaggg 150  
ttctccttcg ggtccgggac tctgggctcc accaccgtgg ccgccggcgg 200  
gaccagcaca ggcggcgttt tctccttcgg aacgggaacg tctagcaacc 250  
cttctgtggg gctcaatctt ggaaatcttg gaagtacttc aactccagca 300  
actacatctg ctcttcaag tggttttgga accgggctct ttggatctaa 350  
acctgccact gggttcactc taggaggaac aaatacaggt gccttgaca 400  
ccaagaggcc tcaagtggtc accaaatatg gaaccctgca aggaaaacag 450  
atgcatgtgg ggaagacacc catccaagtc tttttaggag tccccttctc 500

cagacctcct ctaggtatcc tcaggtttgc acctccagaa cccccggagc 550  
cctggaaagg aatcagagat gctaccacct acccgctgg atggagtctc 600  
gctctgtcgc caggctggag tgcagtggca cgatctcggc tcaactgcaac 650  
ctccgcctcc cgggttcaag cgagtctcct gcctcagcct ctgagtgtct 700  
ggggctacag gtgcctgcag gagtccctggg gccagctggc ctcgatgtac 750  
gtcagcacgc gggaacggta caagtggctg cgcttcagcg aggactgtct 800  
gtacctgaac gtgtacgcgc cggcgcgcg gcgcgggat cccagctgc 850  
cagtgatggc ctggttcccg ggaggcgcct tcatcgtggg cgctgcttct 900  
tcgtacgagg gctctgactt ggccgcccgc gagaaagtgg tgctggtgtt 950  
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gttcggccag tcggcggggg ccatgagcat ctcaggactg atgatgtcac 1150  
ccctagctc gggctctctt catcgggcca tttcccagag tggcaccgcg 1200  
ttattcagac ttttcatcac tagtaacca ctgaaagtgg ccaagaaggt 1250  
tgccacactg gctggatgca accacaacag cacacagatc ctggtaaaact 1300  
gcctgagggc actatcaggg accaagggtga tgcgtgtgtc caacaagatg 1350  
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catgagccct gtggtggatg gtgtggtgat cccagatgac cctttggtgc 1450  
tcctgaccca ggggaaggtt tcactctgtc cctaccttct aggtgtcaac 1500  
aacctggaat tcaattggct cttgccttat aatatacca aggagcaggt 1550  
accacttggt gtggaggagt acctggacaa tgtcaatgag catgactgga 1600  
agatgctacg aaaccgtatg atggacatag ttcaagatgc cactttcgtg 1650  
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aatctgcct gctggccacg ctacaacaag gatgaaaagt acctgcagct 1750  
ggattttacc acaagagtgg gcatgaagct caaggagaag aagatggctt 1800  
tttgatgag tctgtaccag tctcaaagac ctgagaagca gaggcaattc 1850  
taagggtggc tatgcaggaa ggagccaaag aggggtttgc cccaccatc 1900

caggccctgg ggagactagc catggacata cctggggaca agagttctac 1950  
 ccaccccaagt ttagaactgc aggagctccc tgctgcctcc aggccaaagc 2000  
 tagagctttt gcctgttggtg tgggacctgc actgcccttt ccagcctgac 2050  
 atcccatgat gccctctac ttcactgttg acatccagtt aggccaggcc 2100  
 ctgtcaacac cacactgtgc tcagctctcc agcctcagga caacctcttt 2150  
 tttcccttc ttcaaactc cccacccttc aatgtctcct tgtgactcct 2200  
 tcttatggga ggtcgacca gactgccact gccctgtca ctgcaccag 2250  
 cttggcattt accatccatc ctgctcaacc ttgttcctgt ctgttcacat 2300  
 tggcctggag gcctagggca ggttgtgaca tggagcaaac ttttgtagt 2350  
 ttgggatctt ctctcccacc cacacttatc tccccaggg cactccaaa 2400  
 gtctatacac aggggtggtc tcttcaataa agaagtgttg attagaaaaa 2450  
 aaaaaa 2456

<210> 254

<211> 545

<212> PRT

<213> Homo sapiens

<400> 254

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Thr | Gly | Phe | Ser | Phe | Gly | Ser | Gly | Thr | Leu | Gly | Ser | Thr |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |
| Thr | Val | Ala | Ala | Gly | Gly | Thr | Ser | Thr | Gly | Gly | Val | Phe | Ser | Phe |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |
| Gly | Thr | Gly | Thr | Ser | Ser | Asn | Pro | Ser | Val | Gly | Leu | Asn | Phe | Gly |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |
| Asn | Leu | Gly | Ser | Thr | Ser | Thr | Pro | Ala | Thr | Thr | Ser | Ala | Pro | Ser |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |
| Ser | Gly | Phe | Gly | Thr | Gly | Leu | Phe | Gly | Ser | Lys | Pro | Ala | Thr | Gly |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |
| Phe | Thr | Leu | Gly | Gly | Thr | Asn | Thr | Gly | Ala | Leu | His | Thr | Lys | Arg |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |
| Pro | Gln | Val | Val | Thr | Lys | Tyr | Gly | Thr | Leu | Gln | Gly | Lys | Gln | Met |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |
| His | Val | Gly | Lys | Thr | Pro | Ile | Gln | Val | Phe | Leu | Gly | Val | Pro | Phe |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |
| Ser | Arg | Pro | Pro | Leu | Gly | Ile | Leu | Arg | Phe | Ala | Pro | Pro | Glu | Pro |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |

|   |     |     |     |
|---|-----|-----|-----|
| Pro Glu Pro Trp Lys Gly Ile Arg Asp Ala Thr Thr Tyr Pro Pro | 140 | 145 | 150 |
| Gly Trp Ser Leu Ala Leu Ser Pro Gly Trp Ser Ala Val Ala Arg | 155 | 160 | 165 |
| Ser Arg Leu Thr Ala Thr Ser Ala Ser Arg Val Gln Ala Ser Leu | 170 | 175 | 180 |
| Leu Pro Gln Pro Leu Ser Val Trp Gly Tyr Arg Cys Leu Gln Glu | 185 | 190 | 195 |
| Ser Trp Gly Gln Leu Ala Ser Met Tyr Val Ser Thr Arg Glu Arg | 200 | 205 | 210 |
| Tyr Lys Trp Leu Arg Phe Ser Glu Asp Cys Leu Tyr Leu Asn Val | 215 | 220 | 225 |
| Tyr Ala Pro Ala Arg Ala Pro Gly Asp Pro Gln Leu Pro Val Met | 230 | 235 | 240 |
| Val Trp Phe Pro Gly Gly Ala Phe Ile Val Gly Ala Ala Ser Ser | 245 | 250 | 255 |
| Tyr Glu Gly Ser Asp Leu Ala Ala Arg Glu Lys Val Val Leu Val | 260 | 265 | 270 |
| Phe Leu Gln His Arg Leu Gly Ile Phe Gly Phe Leu Ser Thr Asp | 275 | 280 | 285 |
| Asp Ser His Ala Arg Gly Asn Trp Gly Leu Leu Asp Gln Met Ala | 290 | 295 | 300 |
| Ala Leu Arg Trp Val Gln Glu Asn Ile Ala Ala Phe Gly Gly Asp | 305 | 310 | 315 |
| Pro Gly Asn Val Thr Leu Phe Gly Gln Ser Ala Gly Ala Met Ser | 320 | 325 | 330 |
| Ile Ser Gly Leu Met Met Ser Pro Leu Ala Ser Gly Leu Phe His | 335 | 340 | 345 |
| Arg Ala Ile Ser Gln Ser Gly Thr Ala Leu Phe Arg Leu Phe Ile | 350 | 355 | 360 |
| Thr Ser Asn Pro Leu Lys Val Ala Lys Lys Val Ala His Leu Ala | 365 | 370 | 375 |
| Gly Cys Asn His Asn Ser Thr Gln Ile Leu Val Asn Cys Leu Arg | 380 | 385 | 390 |
| Ala Leu Ser Gly Thr Lys Val Met Arg Val Ser Asn Lys Met Arg | 395 | 400 | 405 |
| Phe Leu Gln Leu Asn Phe Gln Arg Asp Pro Glu Glu Ile Ile Trp | 410 | 415 | 420 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ser | Met | Ser | Pro | Val | Val | Asp | Gly | Val | Val | Ile | Pro | Asp | Asp | Pro |  |
|     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |     | 435 |  |
| Leu | Val | Leu | Leu | Thr | Gln | Gly | Lys | Val | Ser | Ser | Val | Pro | Tyr | Leu |  |
|     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     | 450 |  |
| Leu | Gly | Val | Asn | Asn | Leu | Glu | Phe | Asn | Trp | Leu | Leu | Pro | Tyr | Asn |  |
|     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     | 465 |  |
| Ile | Thr | Lys | Glu | Gln | Val | Pro | Leu | Val | Val | Glu | Glu | Tyr | Leu | Asp |  |
|     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |  |
| Asn | Val | Asn | Glu | His | Asp | Trp | Lys | Met | Leu | Arg | Asn | Arg | Met | Met |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |  |
| Asp | Ile | Val | Gln | Asp | Ala | Thr | Phe | Val | Tyr | Ala | Thr | Leu | Gln | Thr |  |
|     |     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |  |
| Ala | His | Tyr | His | Arg | Glu | Thr | Pro | Met | Met | Gly | Ile | Cys | Pro | Ala |  |
|     |     |     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |  |
| Gly | His | Ala | Thr | Thr | Arg | Met | Lys | Ser | Thr | Cys | Ser | Trp | Ile | Leu |  |
|     |     |     |     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |  |
| Pro | Gln | Glu | Trp | Ala |     |     |     |     |     |     |     |     |     |     |  |
|     |     |     |     | 545 |     |     |     |     |     |     |     |     |     |     |  |

<210> 255  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 255  
 aggtgcctgc aggagtcctg ggg 23

<210> 256  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 256  
 ccacctcagg aagccgaaga tgcc 24

<210> 257  
 <211> 45  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 257  
gaacggtaca agtggctgcg cttcagcgag gactgtctgt acctg 45

<210> 258

<211> 2764

<212> DNA

<213> Homo sapiens

<400> 258

gagaacaggc ctgtctcagg caggccctgc gcctcctatg cggagatgct 50  
actgccactg ctgctgtcct cgctgctggg cgggtcccag gctatggatg 100  
ggagattctg gatacgagtg caggagtcag tgatggtgcc ggagggcctg 150  
tgcattctctg tgcctgctc tttctcctac ccccgacaag actggacagg 200  
gtctacccca gcttatggct actggttcaa agcagtgact gagacaacca 250  
agggtgctcc tgtggccaca aaccaccaga gtcgagaggt ggaaatgagc 300  
acccgggggc gattccagct cactggggat cccgccaagg ggaactgctc 350  
cttggtgatc agagacgcgc agatgcagga tgagtcacag tacttctttc 400  
gggtggagag aggaagctat gtgacatata atttcatgaa cgatgggttc 450  
tttctaaaag taacagtgtc cagcttcaag cccagacccc aggaccacaa 500  
caccgacctc acctgccatg tggacttctc cagaaagggg gtgagcgcac 550  
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agcatttcac gtgacaacac gccagccctg gagccccagc cccagggaaa 650  
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 <212> PRT  
 <213> Homo sapiens

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 35 40 45  
 Pro Arg Gln Asp Trp Thr Gly Ser Thr Pro Ala Tyr Gly Tyr Trp  
 50 55 60  
 Phe Lys Ala Val Thr Glu Thr Thr Lys Gly Ala Pro Val Ala Thr  
 65 70 75  
 Asn His Gln Ser Arg Glu Val Glu Met Ser Thr Arg Gly Arg Phe  
 80 85 90  
 Gln Leu Thr Gly Asp Pro Ala Lys Gly Asn Cys Ser Leu Val Ile  
 95 100 105  
 Arg Asp Ala Gln Met Gln Asp Glu Ser Gln Tyr Phe Phe Arg Val  
 110 115 120  
 Glu Arg Gly Ser Tyr Val Thr Tyr Asn Phe Met Asn Asp Gly Phe  
 125 130 135  
 Phe Leu Lys Val Thr Val Leu Ser Phe Thr Pro Arg Pro Gln Asp  
 140 145 150  
 His Asn Thr Asp Leu Thr Cys His Val Asp Phe Ser Arg Lys Gly  
 155 160 165  
 Val Ser Ala Gln Arg Thr Val Arg Leu Arg Val Ala Tyr Ala Pro  
 170 175 180  
 Arg Asp Leu Val Ile Ser Ile Ser Arg Asp Asn Thr Pro Ala Leu  
 185 190 195  
 Glu Pro Gln Pro Gln Gly Asn Val Pro Tyr Leu Glu Ala Gln Lys  
 200 205 210  
 Gly Gln Phe Leu Arg Leu Leu Cys Ala Ala Asp Ser Gln Pro Pro  
 215 220 225

|   |     |     |     |
|---|-----|-----|-----|
| Ala Thr Leu Ser Trp Val Leu Gln Asn Arg Val Leu Ser Ser Ser | 230 | 235 | 240 |
| His Pro Trp Gly Pro Arg Pro Leu Gly Leu Glu Leu Pro Gly Val | 245 | 250 | 255 |
| Lys Ala Gly Asp Ser Gly Arg Tyr Thr Cys Arg Ala Glu Asn Arg | 260 | 265 | 270 |
| Leu Gly Ser Gln Gln Arg Ala Leu Asp Leu Ser Val Gln Tyr Pro | 275 | 280 | 285 |
| Pro Glu Asn Leu Arg Val Met Val Ser Gln Ala Asn Arg Thr Val | 290 | 295 | 300 |
| Leu Glu Asn Leu Gly Asn Gly Thr Ser Leu Pro Val Leu Glu Gly | 305 | 310 | 315 |
| Gln Ser Leu Cys Leu Val Cys Val Thr His Ser Ser Pro Pro Ala | 320 | 325 | 330 |
| Arg Leu Ser Trp Thr Gln Arg Gly Gln Val Leu Ser Pro Ser Gln | 335 | 340 | 345 |
| Pro Ser Asp Pro Gly Val Leu Glu Leu Pro Arg Val Gln Val Glu | 350 | 355 | 360 |
| His Glu Gly Glu Phe Thr Cys His Ala Arg His Pro Leu Gly Ser | 365 | 370 | 375 |
| Gln His Val Ser Leu Ser Leu Ser Val His Tyr Lys Lys Gly Leu | 380 | 385 | 390 |
| Ile Ser Thr Ala Phe Ser Asn Gly Ala Phe Leu Gly Ile Gly Ile | 395 | 400 | 405 |
| Thr Ala Leu Leu Phe Leu Cys Leu Ala Leu Ile Ile Met Lys Ile | 410 | 415 | 420 |
| Leu Pro Lys Arg Arg Thr Gln Thr Glu Thr Pro Arg Pro Arg Phe | 425 | 430 | 435 |
| Ser Arg His Ser Thr Ile Leu Asp Tyr Ile Asn Val Val Pro Thr | 440 | 445 | 450 |
| Ala Gly Pro Leu Ala Gln Lys Arg Asn Gln Lys Ala Thr Pro Asn | 455 | 460 | 465 |
| Ser Pro Arg Thr Pro Pro Pro Pro Gly Ala Pro Ser Pro Glu Ser | 470 | 475 | 480 |
| Lys Lys Asn Gln Lys Lys Gln Tyr Gln Leu Pro Ser Phe Pro Glu | 485 | 490 | 495 |
| Pro Lys Ser Ser Thr Gln Ala Pro Glu Ser Gln Glu Ser Gln Glu | 500 | 505 | 510 |

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Pro Glu Ala Arg Met Pro Lys Gly Thr Gln Ala Asp Tyr Ala Glu  
530 535 540

Val Lys Phe Gln

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<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 260  
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<210> 261  
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<223> Synthetic oligonucleotide probe

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<210> 263  
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<212> DNA  
<213> Homo sapiens

<400> 263  
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caacagaaaa ctctcaaaca aagaaagtca agcagccagt gcgatctcat 150  
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aatgaatacg actagtcatc acatcggcc gctaagatct gatttagaca 250  
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<210> 264

<211> 772

<212> PRT

<213> Homo sapiens

<400> 264

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|----|
| Met | Asn | Cys | Tyr | Leu | Leu | Leu | Arg | Phe | Met | Leu | Gly | Ile | Pro | Leu |  | 1   | 5   | 10  | 15 |
| Leu | Trp | Pro | Cys | Leu | Gly | Ala | Thr | Glu | Asn | Ser | Gln | Thr | Lys | Lys |  | 20  | 25  | 30  |    |
| Val | Lys | Gln | Pro | Val | Arg | Ser | His | Leu | Arg | Val | Lys | Arg | Gly | Trp |  | 35  | 40  | 45  |    |
| Val | Trp | Asn | Gln | Phe | Phe | Val | Pro | Glu | Glu | Met | Asn | Thr | Thr | Ser |  | 50  | 55  | 60  |    |
| His | His | Ile | Gly | Gln | Leu | Arg | Ser | Asp | Leu | Asp | Asn | Gly | Asn | Asn |  | 65  | 70  | 75  |    |
| Ser | Phe | Gln | Tyr | Lys | Leu | Leu | Gly | Ala | Gly | Ala | Gly | Ser | Thr | Phe |  | 80  | 85  | 90  |    |
| Ile | Ile | Asp | Glu | Arg | Thr | Gly | Asp | Ile | Tyr | Ala | Ile | Gln | Lys | Leu |  | 95  | 100 | 105 |    |
| Asp | Arg | Glu | Glu | Arg | Ser | Leu | Tyr | Ile | Leu | Arg | Ala | Gln | Val | Ile |  | 110 | 115 | 120 |    |
| Asp | Ile | Ala | Thr | Gly | Arg | Ala | Val | Glu | Pro | Glu | Ser | Glu | Phe | Val |  | 125 | 130 | 135 |    |
| Ile | Lys | Val | Ser | Asp | Ile | Asn | Asp | Asn | Glu | Pro | Lys | Phe | Leu | Asp |  | 140 | 145 | 150 |    |
| Glu | Pro | Tyr | Glu | Ala | Ile | Val | Pro | Glu | Met | Ser | Pro | Glu | Gly | Thr |  | 155 | 160 | 165 |    |
| Leu | Val | Ile | Gln | Val | Thr | Ala | Ser | Asp | Ala | Asp | Asp | Pro | Ser | Ser |  | 170 | 175 | 180 |    |
| Gly | Asn | Asn | Ala | Arg | Leu | Leu | Tyr | Ser | Leu | Leu | Gln | Gly | Gln | Pro |  | 185 | 190 | 195 |    |
| Tyr | Phe | Ser | Val | Glu | Pro | Thr | Thr | Gly | Val | Ile | Arg | Ile | Ser | Ser |  | 200 | 205 | 210 |    |
| Lys | Met | Asp | Arg | Glu | Leu | Gln | Asp | Glu | Tyr | Trp | Val | Ile | Ile | Gln |  | 215 | 220 | 225 |    |
| Ala | Lys | Asp | Met | Ile | Gly | Gln | Pro | Gly | Ala | Leu | Ser | Gly | Thr | Thr |  | 230 | 235 | 240 |    |
| Ser | Val | Leu | Ile | Lys | Leu | Ser | Asp | Val | Asn | Asp | Asn | Lys | Pro | Ile |  | 245 | 250 | 255 |    |
| Phe | Lys | Glu | Ser | Leu | Tyr | Arg | Leu | Thr | Val | Ser | Glu | Ser | Ala | Pro |  | 260 | 265 | 270 |    |
| Thr | Gly | Thr | Ser | Ile | Gly | Thr | Ile | Met | Ala | Tyr | Asp | Asn | Asp | Ile |  | 275 | 280 | 285 |    |

|                 |                     |                         |
|-----------------|---------------------|-------------------------|
| Gly Glu Asn Ala | Glu Met Asp Tyr Ser | Ile Glu Glu Asp Asp Ser |
| 290             | 295                 | 300                     |
| Gln Thr Phe Asp | Ile Ile Thr Asn His | Glu Thr Gln Glu Gly Ile |
| 305             | 310                 | 315                     |
| Val Ile Leu Lys | Lys Lys Val Asp Phe | Glu His Gln Asn His Tyr |
| 320             | 325                 | 330                     |
| Gly Ile Arg Ala | Lys Val Lys Asn His | His Val Pro Glu Gln Leu |
| 335             | 340                 | 345                     |
| Met Lys Tyr His | Thr Glu Ala Ser Thr | Thr Phe Ile Lys Ile Gln |
| 350             | 355                 | 360                     |
| Val Glu Asp Val | Asp Glu Pro Pro Leu | Phe Leu Leu Pro Tyr Tyr |
| 365             | 370                 | 375                     |
| Val Phe Glu Val | Phe Glu Glu Thr Pro | Gln Gly Ser Phe Val Gly |
| 380             | 385                 | 390                     |
| Val Val Ser Ala | Thr Asp Pro Asp Asn | Arg Lys Ser Pro Ile Arg |
| 395             | 400                 | 405                     |
| Tyr Ser Ile Thr | Arg Ser Lys Val Phe | Asn Ile Asn Asp Asn Gly |
| 410             | 415                 | 420                     |
| Thr Ile Thr Thr | Ser Asn Ser Leu Asp | Arg Glu Ile Ser Ala Trp |
| 425             | 430                 | 435                     |
| Tyr Asn Leu Ser | Ile Thr Ala Thr Glu | Lys Tyr Asn Ile Glu Gln |
| 440             | 445                 | 450                     |
| Ile Ser Ser Ile | Pro Leu Tyr Val Gln | Val Leu Asn Ile Asn Asp |
| 455             | 460                 | 465                     |
| His Ala Pro Glu | Phe Ser Gln Tyr Tyr | Glu Thr Tyr Val Cys Glu |
| 470             | 475                 | 480                     |
| Asn Ala Gly Ser | Gly Gln Val Ile Gln | Thr Ile Ser Ala Val Asp |
| 485             | 490                 | 495                     |
| Arg Asp Glu Ser | Ile Glu Glu His His | Phe Tyr Phe Asn Leu Ser |
| 500             | 505                 | 510                     |
| Val Glu Asp Thr | Asn Asn Ser Ser Phe | Thr Ile Ile Asp Asn Gln |
| 515             | 520                 | 525                     |
| Asp Asn Thr Ala | Val Ile Leu Thr Asn | Arg Thr Gly Phe Asn Leu |
| 530             | 535                 | 540                     |
| Gln Glu Glu Pro | Val Phe Tyr Ile Ser | Ile Leu Ile Ala Asp Asn |
| 545             | 550                 | 555                     |
| Gly Ile Pro Ser | Leu Thr Ser Thr Asn | Thr Leu Thr Ile His Val |
| 560             | 565                 | 570                     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Asp | Cys | Gly | Asp | Ser | Gly | Ser | Thr | Gln | Thr | Cys | Gln | Tyr | Gln | 575 | 580 | 585 |
| Glu | Leu | Val | Leu | Ser | Met | Gly | Phe | Lys | Thr | Glu | Val | Ile | Ile | Ala | 590 | 595 | 600 |
| Ile | Leu | Ile | Cys | Ile | Met | Ile | Ile | Phe | Gly | Phe | Ile | Phe | Leu | Thr | 605 | 610 | 615 |
| Leu | Gly | Leu | Lys | Gln | Arg | Arg | Lys | Gln | Ile | Leu | Phe | Pro | Glu | Lys | 620 | 625 | 630 |
| Ser | Glu | Asp | Phe | Arg | Glu | Asn | Ile | Phe | Gln | Tyr | Asp | Asp | Glu | Gly | 635 | 640 | 645 |
| Gly | Gly | Glu | Glu | Asp | Thr | Glu | Ala | Phe | Asp | Ile | Ala | Glu | Leu | Arg | 650 | 655 | 660 |
| Ser | Ser | Thr | Ile | Met | Arg | Glu | Arg | Lys | Thr | Arg | Lys | Thr | Thr | Ser | 665 | 670 | 675 |
| Ala | Glu | Ile | Arg | Ser | Leu | Tyr | Arg | Gln | Ser | Leu | Gln | Val | Gly | Pro | 680 | 685 | 690 |
| Asp | Ser | Ala | Ile | Phe | Arg | Lys | Phe | Ile | Leu | Glu | Lys | Leu | Glu | Glu | 695 | 700 | 705 |
| Ala | Asn | Thr | Asp | Pro | Cys | Ala | Pro | Pro | Phe | Asp | Ser | Leu | Gln | Thr | 710 | 715 | 720 |
| Tyr | Ala | Phe | Glu | Gly | Thr | Gly | Ser | Leu | Ala | Gly | Ser | Leu | Ser | Ser | 725 | 730 | 735 |
| Leu | Glu | Ser | Ala | Val | Ser | Asp | Gln | Asp | Glu | Ser | Tyr | Asp | Tyr | Leu | 740 | 745 | 750 |
| Asn | Glu | Leu | Gly | Pro | Arg | Phe | Lys | Arg | Leu | Ala | Cys | Met | Phe | Gly | 755 | 760 | 765 |
| Ser | Ala | Val | Gln | Ser | Asn | Asn |     |     |     |     |     |     |     |     | 770 |     |     |

<210> 265

<211> 349

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 24, 60, 141, 226, 228, 249, 252

<223> unknown base

<400> 265

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gaatatatttn taaaatggat agagaactgc aagatgagta ttgggtaatc 100



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aagtgtatta attaaacttt cagatgttaa tgacaataag cctatatatta 200  
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<210> 266

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 266

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<210> 267

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 267

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<210> 268

<211> 52

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 268

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gc 52

<210> 269

<211> 2747

<212> DNA

<213> Homo sapiens

<400> 269

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cccgcccttaa cttcctccgc ggggccagc caccttcggg agtccgggtt 150

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ccttatatac atatgtaaca gtcaaatac atttactctt cttcattagc 1350  
tttgggtgcc ttgcccaca gacctagcct aatttaccaa ggatgaattc 1400  
tttcaattct tcatgcgtgc cttttcata tacttatttt attttttacc 1450  
ataatcttat agcacttgca tcgttattaa gcccttattt gttttgtgtt 1500  
tcattgggtct ctatctcctg aatctaacac atttcatagc ctacatttta 1550  
gtttctaaag ccaagaagaa tttattacaa atcagaactt tggaggcaaa 1600

tctttctgca tgaccaaagt gataaattcc tgttgacctt cccacacaat 1650  
ccctgtactc tgacccatag cactcttggt tgctttgaaa atatttgtcc 1700  
aattgagtag ctgcatgctg ttccccagg tgttgtaaca caactttatt 1750  
gattgaattt ttaagctact tattcatagt tttatatccc cctaaactac 1800  
ctttttgttc cccattcctt aattgtattg ttttccaag tgtaattatc 1850  
atgcgtttta tatcttccta ataagggtg gtctgtttgt ctgaacaaag 1900  
tgctagactt tctggagtga taatctggtg acaaatttc tctctgtagc 1950  
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gagataatga tacttaacca gttagaagag gtagtgtgaa tattaattag 2050  
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cactgaaca aaacctacac acataccttc atgtgggttca gtgccttcct 2250  
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tccagtctgt acagaatgct atttcacttg agcaagatga tgtaatggaa 2450  
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caatcacctg ctgtgtttga gcaaggcatt tggtgctgt aagcttattg 2550  
cttcatctgt aagcgggtgt ttgtaattcc tgatcttccc acctcacagt 2600  
gatgttggtg ggatccagtg agatagaata catgtaagtg tggttttgta 2650  
atntaaaaag tgctatacta agggaaagaa ttgaggaatt aactgcatac 2700  
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<210> 270

<211> 211

<212> PRT

<213> Homo sapiens

<400> 270

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Asn | Ala | Gly | Leu | Gln | Leu | Leu | Gly | Phe | Ile | Leu | Ala | Phe |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

Leu Gly Trp Ile Gly Ala Ile Val Ser Thr Ala Leu Pro Gln Trp

|   | 20  |  | 25  |  | 30  |
|---|-----|--|-----|--|-----|
| Arg Ile Tyr Ser Tyr Ala Gly Asp Asn Ile Val Thr Ala Gln Ala | 35  |  | 40  |  | 45  |
| Met Tyr Glu Gly Leu Trp Met Ser Cys Val Ser Gln Ser Thr Gly | 50  |  | 55  |  | 60  |
| Gln Ile Gln Cys Lys Val Phe Asp Ser Leu Leu Asn Leu Ser Ser | 65  |  | 70  |  | 75  |
| Thr Leu Gln Ala Thr Arg Ala Leu Met Val Val Gly Ile Leu Leu | 80  |  | 85  |  | 90  |
| Gly Val Ile Ala Ile Phe Val Ala Thr Val Gly Met Lys Cys Met | 95  |  | 100 |  | 105 |
| Lys Cys Leu Glu Asp Asp Glu Val Gln Lys Met Arg Met Ala Val | 110 |  | 115 |  | 120 |
| Ile Gly Gly Ala Ile Phe Leu Leu Ala Gly Leu Ala Ile Leu Val | 125 |  | 130 |  | 135 |
| Ala Thr Ala Trp Tyr Gly Asn Arg Ile Val Gln Glu Phe Tyr Asp | 140 |  | 145 |  | 150 |
| Pro Met Thr Pro Val Asn Ala Arg Tyr Glu Phe Gly Gln Ala Leu | 155 |  | 160 |  | 165 |
| Phe Thr Gly Trp Ala Ala Ala Ser Leu Cys Leu Leu Gly Gly Ala | 170 |  | 175 |  | 180 |
| Leu Leu Cys Cys Ser Cys Pro Arg Lys Thr Thr Ser Tyr Pro Thr | 185 |  | 190 |  | 195 |
| Pro Arg Pro Tyr Pro Lys Pro Ala Pro Ser Ser Gly Lys Asp Tyr | 200 |  | 205 |  | 210 |

Val

<210> 271

<211> 564

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 21, 69, 163, 434, 436, 444

<223> unknown base

<400> 271

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ggatggatcg gcgccatcnt cacactgccc ttccccagtg gaggatttta 100

ctccctatgc tggcgacaac atcgtgaccg cccagcccat gtacgagggg 150

ctgtggatgt ccngcgtgtc gcagagcacc gggcagatcc agtgcaaagt 200  
ctttgactcc ttgctgaatc tgagcagcac attgcaagca acccgtgcct 250  
tgatggtggt tggcatcctc ctgggagtga tagcaatctt tgtggceacc 300  
gttggcatga agtgtatgaa gtgcttgga gacgatgagg tgcagaagat 350  
gaggatggct gtcattgggg gcgcgatatt tcttcttgca ggtctggcta 400  
ttttagttgc cacagcatgg tatggcaata gaancnttca acanttctat 450  
gaccctatga cccagtcaa tgccaggtag gaatttggtc aggctctctt 500  
cactggctgg gctgctgctt ctctctgcct tctgggaggt gccctacttt 550  
gctgttcctg tccc 564

<210> 272

<211> 498

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 30, 49, 102, 141, 147, 171, 324-325, 339-341

<223> unknown base

<400> 272

acccttgacc caacgcggcc ccccgaccgn ttcattggcca aacgcgggnc 50  
tccagctgtt gggcttcatt ctccccttcc tgggatggac cggcgcccat 100  
cntcagcact gccctgcccc agtggaggat ttactoctat nccggcnaca 150  
acatcgtgac cgcccaggcc ntgtacgagg ggctgtggat gtcctgcgtg 200  
tcgcagagca ccgggcagat ccagtgcaaa gtctttgact cccttgctga 250  
atctgagcag cacattgcaa gcaaccogtg ccttgatggt ggttggcatc 300  
ctcctgggag tgatagcaat cttnttggcc accgttgtnn ntgaagtgt 350  
tgaagtgcctt ggaagacgat gaggtgcaga agatgaggat ggctgtcatt 400  
gggggcgcga tatttcttct tgcaggctctg gctatttttag ttgccacagc 450  
atggtatggc aatagaatcg ttcaagaatt ctatgaccct atgaccga 498

<210> 273

<211> 552

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 25, 57, 67, 94-95, 116, 152, 165, 212, 233, 392-394  
<223> unknown base

<400> 273

gggcccgacc attatccaac cgggntcact gttggctcat ctccctcctg 50  
gatgaancgc gccatcntca gactccctgc cccatggaga tttnnctat 100  
gctggcgaca acatcntgac cccagccat gtacgagggg ctttgaacgt 150  
cngcgtgtcg cagancaccg ggcagatcca gtgcaaagtc tttgactcct 200  
tgctgaatct gngcagcaca ttgcagcaac ccttgccctg atggtggttg 250  
gcatcctcct gggagtgata gcaatctttg tggccaccgt tggcatgaag 300  
tgtatgaagt gcttgaaga cgatgaggtg cagaagatga ggatggctgt 350  
cattgggggc gcgatatttc ttcttgacagg tctggctatt tnnngttgcc 400  
acagcatggt atggcaatag aatcggtcaa gaattctatg accctatgac 450  
cccagtcaat gccaggtagc aatttggtca ggctctcttc actggctggg 500  
ctgctgcttc tctctgcctt ctgggaggtg cctactttg ctgttcctgc 550  
ga 552

<210> 274

<211> 526

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 25, 50, 60, 123, 127, 370, 395, 397-398, 402-403, 405-407

<223> unknown base

<400> 274

attctcccct cctggatgga tgcgccacc gtcacattgc cttccccan 50  
tggaggattn actcctatgc tggcgacaac atcgtgaccc cccaggccat 100  
ttaccgaggg gctttggatg tcntgcntgt cgcagagcac cgggcagatc 150  
ccagtgcaaa gtctttgact ccttgctgaa tctgagcagc acattgcaag 200  
caaccctgac cttgatgggg ttggcatcct cctgggagtg atagcaacct 250  
ttgtggccac cggtggcatg aagtgtatga agtgcttgga agacgatgag 300  
gtgccagaag atgaggatgg ctgtcattgg gggcgcgata tttcttggtg 350  
caggtctggc tatttttagtn gccacagcat ggtatggcaa tagantnntt 400  
cnnngnntct atgaccctat gacccagtc aatgccaggt acgaatttgg 450

tcaggctctc ttcactggct gggctgctgc ttctctctgc cttctgggag 500  
gtgccctact ttgctgttcc tgtccc 526

<210> 275  
<211> 398  
<212> DNA  
<213> Homo sapiens

<220>  
<221> unsure  
<222> 22, 61, 91, 144, 238-239, 262, 265-266, 271, 274  
<223> unknown base

<400> 275  
agagcaccgg cagatcccag tncaaagtct ttgacccttg ctgaatctga 50  
gcagcacatt ncaagcaacc ccttgcccttg aagggtggtg ncatcccccc 100  
tgggagtga tagcaatctt tgtggccacc gttggcatga agtntatgaa 150  
gtgcttggaa gacgatgagg tgcagaagat gaggatggct gtcattgggg 200  
gcgcgatatt tcttcttgca ggtctggcta ttttagtnnc cacagcatgg 250  
tatggcaata gnatnnttcg nggnttctat gaccctatga cccagtcaa 300  
tgccaggtag gaatttggtc aggctctctt cactggctgg gctgctgctt 350  
ctctctgcct tctgggaggt gccctacttt gctgttcttg tccccgaa 398

<210> 276  
<211> 495  
<212> DNA  
<213> Homo sapiens

<220>  
<221> unsure  
<222> 39, 58, 130, 234, 314, 364, 427, 450, 461, 476  
<223> unknown base

<400> 276  
agcaatgccc tgccccaggt ggaggattaa ttcctatgnt ggggacaaca 50  
ttgtgaacngc ccaggccatg tacggggggc tgtggatgtc ctgcgtgtcg 100  
cagagcaccg ggcagatcca gtgcaaagtn tttgactcct tgctgaattt 150  
gagcagcaca ttgcaagcaa cccgtgcctt gatggtgggtt ggcattcttc 200  
tgggagtgat agcaatcttt gtggccaccg tggnaatgaa gtgtatgaag 250  
tgcttgggaag acgatgaggt gcagaagatg aggatggctg tcattggggg 300  
cgcgatatatt ctnttgcag gtctggctat tttagttgcc acagcatggt 350  
atggcaatag aatngttcaa gaattttatg accctatgac cccagtcaat 400

gccaggtacg aatttgggtca ggctttnttc actggctggg ctgctgcttn 450

tttctgcctt ntgggaggtg ccctantttg ctgttcctgc gaacc 495

<210> 277

<211> 200

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 34, 87, 138, 147, 163, 165-166, 172

<223> unknown base

<400> 277

tcataggggg gcgcgatatt ttttcttgca ggtntgggta ttttagttgc 50

cacagcatgg tatggcaata gaatcgttca agaattntat gaccctatga 100

ccccagtcaa tgccaggtac gaatttgggtc aggctctntt cactggntgg 150

gctgctgctt ctntnngcct tntgggaggt gccctacttt gctgttcctg 200

<210> 278

<211> 542

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 26, 43, 55, 77, 198, 361-362, 391-392, 396

<223> unknown base

<400> 278

ttcctgggat ggatccgccc ccacntcac atgccctgcc ccttgagat 50

ttacncctat gctggcgaaac aacatcntga ccgcccaggc catgtacgag 100

gggctgtgga atgtcctgcg tgtcccagag caccgggcag atccagtgc 150

aagtctttga ctcttgctg aatctgagca gcacattgca agcaacctg 200

ccttgatggg ggttggcatc ctctgggag tgatagcaat ctttgtggcc 250

accgttggca tgaaagtgtg tgaagtgtt ggaagacgat gaggtgcaga 300

agatgaggat ggctgtcatt gggggcgcgga tatttcttct tgcaggctctg 350

gctatttttag nngccacagc atggtatggc aatcagaccc nntcanaaac 400

tctatgaccc tatgacccca gtcaatgccg ggtacgaatt tggtcaggct 450

ctcttcactg gctgggctgc tgcttctctc tgccttctgg gaggtgccct 500

actttgctgt tcctgtcccc gaaaaacaac ctcttaccga cg 542



<210> 279  
<211> 548  
<212> DNA  
<213> Homo sapiens

<220>  
<221> unsure  
<222> 90, 115, 147, 228, 387  
<223> unknown base

<400> 279  
cggggctgca gctgttgggc ttcattctgc ttcctgggat ggaatcggcg 50  
ccatcgtcag cactgccctg ccccatggag gatttactcn tatgctggcg 100  
acaacatcgt gaccncccag gccatgtacg aggggctgtg gatgtcngcg 150  
tgtcgcagag caccgggcag atccagtga aagtctttga ctcttgctg 200  
aatctgagca gcacattgca agcaaccntg ccttgatggt ggttggcatc 250  
ctcctgggag tgatagcaat ctttgtggcc accgttggca tgaagtgtat 300  
gaagtgcttg gaagacgatg aggtgcagaa gatgaggatg gctgtcattg 350  
ggggcgcgat atttcttctt gcaggctctgg ctatttntag ttgccacagc 400  
atggtatggc aatagaatcg ttcaagaatt ctatgaccct atgaccccag 450  
tcaatgccag gtacgaattt ggtcaggctc tcttcactgg ctgggctgct 500  
gcttctctct gccttctggg aggtgcccta ctttgcgtgt cctgcgaa 548

<210> 280  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 280  
cgagcgagtc atggccaacg c 21

<210> 281  
<211> 26  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 281  
gtgtcacacg tagtctttcc cgctgg 26

<210> 282  
<211> 43

<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 282  
ctgcagctgt tgggcttcat tctcgccttc ctgggatgga tcg 43

<210> 283  
<211> 2285  
<212> DNA  
<213> Homo sapiens

<400> 283  
gcgtgccgtc agctcgccgg gcaccgcggc ctcgccctcg cctccgccc 50  
ctgcgcctgc accgcgtaga ccgaccccc cctccagcgc gcccacccgg 100  
tagaggaccc ccgcccgtgc ccgaccggg cccgccttt ttgtaaaact 150  
taaagcgggc gcagcattaa cgcttccgc cccggtgacc tctcaggggt 200  
ctccccgcca aaggtgctcc gccgctaagg aacatggcga aggtggagca 250  
ggtcctgagc ctcgagccgc agcacgagct caaattccga ggtcccttca 300  
ccgatgttgt caccaccaac ctaaagcttg gcaacccgac agaccgaaat 350  
gtgtgtttta aggtgaagac tacagcacca cgtaggtact gtgtgaggcc 400  
caacagcggg atcatcgatg caggggcctc aattaatgta tctgtgatgt 450  
tacagccttt cgattatgat cccaatgaga aaagtaaaca caagtttatg 500  
gttcagtcta tgtttgctcc aactgacact tcagatatgg aagcagtatg 550  
gaaggaggca aaaccggaag accttatgga ttcaaaactt agatgtgtgt 600  
ttgaattgcc agcagagaat gataaaccac atgatgtaga aataaataaa 650  
attatatcca caactgcac aaagacagaa acaccaatag tgtctaagtc 700  
tctgagttct tctttggatg acaccgaagt taagaagggt atggaagaat 750  
gtaagaggct gcaaggtgaa gttcagaggc tacgggagga gaacaagcag 800  
ttcaaggaag aagatggact gcggatgagg aagacagtgc agagcaacag 850  
ccccatttca gcattagccc caactgggaa ggaagaaggc cttagcacc 900  
ggctcttggc tctggtggtt ttgttcttta tcgttggtgt aattattggg 950  
aagattgcct tgtagaggta gcatgcacag gatggtaa at tggattggtg 1000  
gatccaccat atcatgggat ttaaatttat cataaccatg tgtaaaaaga 1050

aattaatgta tgatgacatc tcacaggtct tgcctttaaa ttaccctcc 1100  
ctgcacacac atacacagat acacacacac aaatataatg taacgatctt 1150  
ttagaaagtt aaaaatgtat agtaactgat tgagggggaa aaagaatgat 1200  
ctttattaat gacaagggaa accatgagta atgccacaat ggcatattgt 1250  
aaatgtcatt ttaaacattg gtaggccttg gtacatgatg ctggattacc 1300  
tctcttaaaa tgacaccctt cctcgctgtg tgggtgctggc ccttggggag 1350  
ctggagccca gcatgctggg gagtgcggtc agctccacac agtagtccc 1400  
acgtggccca ctcccggccc aggtgcttt cctgtctctt agttctgtcc 1450  
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ttgactgtg gcagcatcag acgtactcgt cataagttag aggcgtgtgt 1550  
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taaagggacc aagctaaatt tgtattggtt catgtagtga agtcaaactg 1650  
ttattcagag atgtttaatg catatttaac ttatttaatg tatttcact 1700  
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ctctggagag tctggctcatg tggaggtggg gtttattggg atgctggaga 1850  
agagctgcca ggaagtgtt tttctgggtc agtaaataac aactgtcata 1900  
gggagggaaa ttctcagtag tgacagtcaa ctctaggtta ctttttttaa 1950  
tgaagagtag tcagtcttct agattgttct tataccacct ctcaaccatt 2000  
actcactt ccagcgcca ggtccaagtc tgagcctgac ctccccttg 2050  
ggacctagcc tggagtcagg acaaatggat cgggctgcag agggttagaa 2100  
gcgagggcac cagcagttgt ggggtggggag caagggaaga gagaaactct 2150  
tcagcgaatc cttctagtag tagttgagag ttgactgtg aattaatttt 2200  
atgccataaa agaccaaccc agttctgttt gactatgtag catcttgaaa 2250  
agaaaaatta taataaagcc ccaaaattaa gaaaa 2285

<210> 284

<211> 243

<212> PRT

<213> Homo sapiens

<400> 284

Met Ala Lys Val Glu Gln Val Leu Ser Leu Glu Pro Gln His Glu

| 1   | 5   | 10  | 15  |
|---|-----|-----|-----|
| Leu Lys Phe Arg Gly Pro Phe Thr Asp Val Val Thr Thr Asn Leu | 20  | 25  | 30  |
| Lys Leu Gly Asn Pro Thr Asp Arg Asn Val Cys Phe Lys Val Lys | 35  | 40  | 45  |
| Thr Thr Ala Pro Arg Arg Tyr Cys Val Arg Pro Asn Ser Gly Ile | 50  | 55  | 60  |
| Ile Asp Ala Gly Ala Ser Ile Asn Val Ser Val Met Leu Gln Pro | 65  | 70  | 75  |
| Phe Asp Tyr Asp Pro Asn Glu Lys Ser Lys His Lys Phe Met Val | 80  | 85  | 90  |
| Gln Ser Met Phe Ala Pro Thr Asp Thr Ser Asp Met Glu Ala Val | 95  | 100 | 105 |
| Trp Lys Glu Ala Lys Pro Glu Asp Leu Met Asp Ser Lys Leu Arg | 110 | 115 | 120 |
| Cys Val Phe Glu Leu Pro Ala Glu Asn Asp Lys Pro His Asp Val | 125 | 130 | 135 |
| Glu Ile Asn Lys Ile Ile Ser Thr Thr Ala Ser Lys Thr Glu Thr | 140 | 145 | 150 |
| Pro Ile Val Ser Lys Ser Leu Ser Ser Ser Leu Asp Asp Thr Glu | 155 | 160 | 165 |
| Val Lys Lys Val Met Glu Glu Cys Lys Arg Leu Gln Gly Glu Val | 170 | 175 | 180 |
| Gln Arg Leu Arg Glu Glu Asn Lys Gln Phe Lys Glu Glu Asp Gly | 185 | 190 | 195 |
| Leu Arg Met Arg Lys Thr Val Gln Ser Asn Ser Pro Ile Ser Ala | 200 | 205 | 210 |
| Leu Ala Pro Thr Gly Lys Glu Glu Gly Leu Ser Thr Arg Leu Leu | 215 | 220 | 225 |
| Ala Leu Val Val Leu Phe Phe Ile Val Gly Val Ile Ile Gly Lys | 230 | 235 | 240 |

Ile Ala Leu

<210> 285  
 <211> 418  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure

<222> 40, 53, 68, 119, 134, 177-178, 255  
<223> unknown base

<400> 285  
gtcagtccttc tagattgtcc ttatcccacc tttcaaccan tactcacatt 50  
tcnagcgccc aggtccangt ctgagcctga cttccccttg gggacctagc 100  
ctggagtcag gacaatggnt cgggctgcag aggnntagaa gcgagggcac 150  
cagcagtttt ggggtggggag caagggngga gagaaactct tcagcgaatc 200  
cttctagtag tagttgagag ttgactgtg aattaatttt atgccataaa 250  
agacnaaccc agttctgttt gactatgtag catcttgaaa agaaaaatta 300  
taataaagcc ccaaaattaa gaattctttt gtcattttgt cacatttgct 350  
ctatgggggg aattattatt ttatcatttt tattattttg ccattggaag 400  
gttaacttta aaatgagc 418

<210> 286  
<211> 543  
<212> DNA  
<213> Homo sapiens

<220>  
<221> unsure  
<222> 73, 97  
<223> unknown base

<400> 286  
tattgtaaag gccattttaa accattggta ggccttggtg catgatgctg 50  
gattacctcc ttaaatagaca cnttcctcg cctgttggtg ctggccnttg 100  
gggagctgga gccccagcat gctggggagt gcggtcagct ccacacagta 150  
gtccccacgt ggcccactcc cggcccaggc tgctttccgt gtcttcagtt 200  
ctgtccaagc catcagctcc ttgggactga tgaacagagt cagaagcca 250  
aaggaattgc cactgtggca gcatcagacg tactcgatcat aagtgaagg 300  
cgtgtgttga ctgattgacc cagcgctttg gaaataaatg gcagtgcctt 350  
gttcacttaa agggaccaag cttaaattgta ttggttcatt tagtgaagtc 400  
aaactgttat tcagagatgt ttaatgcata tttaacttat ttaatgtatt 450  
tcatctcatg ttttcttatt gtcacaagag tacagttaat gctgcgtgct 500  
gctgaactct gttgggtgaa ctggtattgc tgctggaggg ctg 543

<210> 287  
<211> 270

<212> DNA  
<213> Homo sapiens

<220>  
<221> unsure  
<222> 38, 64, 72, 164, 198, 200, 220, 222, 229, 242  
<223> unknown base

<400> 287  
ccctgggtggt tttgttcttt aattcgttgg tgtaattntt gggaagattg 50  
cttgtagagg tagnatgcac cnggctggta aattggattg gtggatccac 100  
catatccatg ggatttaaatt ttatcataac catgtgtaaa aagaaattaa 150  
tgtatgatga catntcacag gtattgcctt taaattaccc atccctgnan 200  
acacatacac agatacacan anacaaatnt aatgtaacga tnttttagaa 250  
agttaaaaat gtatagtaac 270

<210> 288  
<211> 428  
<212> DNA  
<213> Homo sapiens

<220>  
<221> unsure  
<222> 35, 116, 129, 197, 278, 294, 297, 349, 351  
<223> unknown base

<400> 288  
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gcactgtggc agcatnagac gtacttgtna taagtgagag gcgtgtgttg 150  
actgattgac ccagcgcttt ggaaataaat ggcagtgctt tgttcantta 200  
aagggaccaa gctaaatttg tattggttca tgtagtgaag tcaaactggt 250  
attcagagat gtttaatgca tatttaantt atttaatgta tttnatntca 300  
tgttttctta ttgtcacaag agtacagtta atgctgcgtg ctgctgaant 350  
ntgttggtg aactggtatt gctgctggag ggctgtgggc tcctctgtct 400  
ttggagagtc tggatcatgtg gaggtggg 428

<210> 289  
<211> 320  
<212> DNA  
<213> Homo sapiens

<400> 289  
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atgaacagag tcagaagccc aaaggaattg cactgtggca gcatcagacg 100  
tactcgtcac aagtgaagagg cgtgtgttga ctgattgacc cagcgctttg 150  
gaaataaatg gcagtgcctt gttcacttaa agggaccaag ctaaatttgt 200  
attggttcac gtagtgaagt caaactgtta ttcagagatg tttaatgcat 250  
atttaactta tttaatgtat ttcactcat gttttcttat tgcacaaga 300  
gtacagttaa tgctgcgtgc 320

<210> 290

<211> 609

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 57, 60, 186, 235, 244, 304, 339, 355, 359, 361, 387, 432, 441,  
447, 481, 513, 532, 584, 598

<223> unknown base

<400> 290

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gaaaccntgn gtaatgccac aatggcatat tgtaaatgtc attttaaaca 100  
ttggtaggcc ttggtacatg atgctggatt acctctctta aaatgacacc 150  
cttcctcgcc tgttggtgct ggcccttggg gagctngagc ccagcatgct 200  
ggggagtgcg gtctgctcca cacagtagtc ccangtggc ccantcccg 250  
cccaggctgc tttccgtgct ttcagttctg tccaagccat cagctccttg 300  
ggantgatga acagagtcag aagcccaaag gaattgcant gtggcagcat 350  
cagangtant ngtcataagt gagaggcgtg tgttgantga ttgaccagc 400  
gctttggaaa taaatggcag tgctttgttc anttaaaggg nccaagntaa 450  
atttgtattg gttcatgtag tgaagtcaaa ntgttattca gagatgttta 500  
atgcatatth aanttattta atgtatttca tntcatgttt tcttattgtc 550  
acaagggtag agttaatgct gcgtgctgct gaantctgtt gggagaantg 600  
gtattgctg 609

<210> 291

<211> 493

<212> DNA

<213> Homo sapiens

<400> 291

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ttcagttctg tccaagccat cagctccttg ggactgatga acagagtcag 150  
aagcccaaag gaattgcact gtggcagcat cagacgtact cgtcataagt 200  
gagaggcgtg tgttgactga ttgaccagc gctttggaaa taaatggcag 250  
tgctttgttc acttaaagg accaagctaa atttgtattg gttcatgtag 300  
tgaagtcaaa ctgttattca gagatgttta atgcatattt aacttattta 350  
atgtatttca tctcatgttt tcttattgtc acaagagtac agttaatgct 400  
gcgtgctgct gaactctgtt gggagaactg gtattgctgc tggagggctg 450  
tgggctcttc tgtctctgga gactctggc atgtggagg ggg 493

<210> 292

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 292

gcaccaccgt aggtacttgt gtgaggc 27

<210> 293

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 293

aaccaccaga gccaaagacc ggg 23

<210> 294

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 294

cagcggaatc atcgatgcag gggcctcaat taatgtatct gtgatgttac 50

<210> 295

<211> 2530

<212> DNA

<213> Homo sapiens



<400> 295

gcgagctccg ggtgctgtgg cccggccttg gcggggcggc ctccgggtca 50  
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gctctgatct cagctgacag tgccctcggg gaccaaaca gcctggcagg 150  
gtctcacttt gttgcccagg ctggagttca gtgccatgat catggtttac 200  
tgcagccttg acctcctggg ttcaagcgat cctgctgagt agctgggact 250  
acaggacaaa attagaagat caaaatggaa aatatgctgc tttggttgat 300  
atttttcacc cctgggtgga ccctcattga tggatctgaa atggaatggg 350  
attttatgtg gcacttgaga aaggtacccc ggattgtcag tgaaaggact 400  
ttccatctca ccagccccgc atttgaggca gatgctaaga tgatggtaaa 450  
tacagtgtgt ggcattgaat gccagaaaga actcccaact ccagccttt 500  
ctgaattgga ggattatctt tcctatgaga ctgtctttga gaatggcacc 550  
cgaaccttaa ccagggtgaa agttcaagat ttggttcttg agccgactca 600  
aaatatcacc acaaaggag tatctgttag gagaaagaga caggtgtatg 650  
gcaccgacag caggttcagc atcttgga aaaggttctt aaccaatttc 700  
cctttcagca cagctgtgaa gctttccacg ggctgtagtg gcattctcat 750  
ttcccctcag catgttctaa ctgctgccca ctgtgttcat gatggaaagg 800  
actatgtcaa agggagtaaa aagctaagg tagggttgtt gaagatgagg 850  
aataaaagtg gaggcaagaa acgtcgaggt tctaagagga gcaggagaga 900  
agctagtggg ggtgaccaa gagagggtac cagagagcat ctgcaggaga 950  
gagcgaaggg tgggagaaga agaaaaaat ctggccgggg tcagaggatt 1000  
gccgaaggga ggccttcctt tcagtggacc cgggtcaaga atacccacat 1050  
tccgaagggc tgggcacgag gaggcattgg ggacgctacc ttggactatg 1100  
actatgctct tctggagctg aagcgtgctc aaaaaagaa atacatggaa 1150  
cttggaatca gcccaacgat caagaaaatg cctggtggaa tgatccactt 1200  
ctcaggattt gataacgata gggctgatca gttggtctat cggttttgca 1250  
gtgtgtccga cgaatccaat gatctccttt accaatactg cgatgctgag 1300  
tcgggctcca ccggttcggg ggtctatctg cgtctgaaag atccagacaa 1350  
aaagaattgg aagcgcaaaa tcattgcggt ctactcaggg caccagtggg 1400

tggatgtcca cgggggttcag aaggactaca acgttgctgt tcgcatcact 1450  
 cccctaaaat acgcccagat ttgcctctgg attcacggga acgatgccaa 1500  
 ttgtgcttac ggctaacaga gacctgaaac agggcggtgt atcatctaaa 1550  
 tcacagagaa aaccagctct gcttaccgta gtgagatcac ttcataagggt 1600  
 atgcctggac ttgaactctg tcaatagcat ttcaacattt ttcaaaatca 1650  
 ggagattttc gtccatttaa aaaatgtata ggtgcagata ttgaaactag 1700  
 gtgggcactt caatgccaa tatatactct tctttacatg gtgatgagtt 1750  
 tcatttgtag aaaaattttg ttgccttctt aaaaattaga cacactttaa 1800  
 accttcaaac aggtattata aataacatgt gactccttaa tggacttatt 1850  
 ctcaggggcc tactctaaga agaatcta ataggatgctgg ttgtgtatta 1900  
 aatgtgaaat tgcatagata aaggtagatg gttaaagcaat tagtatcaga 1950  
 atagagacag aaagttacaa cacagtttgt actactctga gatggatcca 2000  
 ttcagctcat gccctcaatg tttatattgt gttatctggt gggctctggga 2050  
 catttagttt agtttttttg aagaattaca aatcagaaga aaaagcaagc 2100  
 attataaaca aaactaataa ctgttttact gctttaagaa ataacaatta 2150  
 caatgtgtat tatttaaaaa tgggagaaat agtttggtct atgaaataaa 2200  
 cctagtttag aaatagggaa gctgagacat ttttaagatct caagttttta 2250  
 ttttaactaat actcaaaaata tggacttttc atgtatgcat aggggaagaca 2300  
 cttcacaaat tatgaatgat catgtgttga aagccacatt attttatgct 2350  
 atacattcta tgtatgaggt gctacatttt taggacaaag aattctgtaa 2400  
 tctttttcaa gaaagagtct ttttctcctt gacaaaatcc agcttttgta 2450  
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 cctaaaaatg aataaaattt atgaatatga 2530

<210> 296

<211> 413

<212> PRT

<213> Homo sapiens

<400> 296

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Asn | Met | Leu | Leu | Trp | Leu | Ile | Phe | Phe | Thr | Pro | Gly | Trp |
| 1   |     |     |     |     | 5   |     |     | 10  |     |     |     |     | 15  |     |

Thr Leu Ile Asp Gly Ser Glu Met Glu Trp Asp Phe Met Trp His

| 20  |     |     |     |     |     |     |     |     |     | 25  |     |     |     |     | 30 |  |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Leu | Arg | Lys | Val | Pro | Arg | Ile | Val | Ser | Glu | Arg | Thr | Phe | His | Leu |    |  |  |  |  |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |    |  |  |  |  |
| Thr | Ser | Pro | Ala | Phe | Glu | Ala | Asp | Ala | Lys | Met | Met | Val | Asn | Thr |    |  |  |  |  |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |    |  |  |  |  |
| Val | Cys | Gly | Ile | Glu | Cys | Gln | Lys | Glu | Leu | Pro | Thr | Pro | Ser | Leu |    |  |  |  |  |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |    |  |  |  |  |
| Ser | Glu | Leu | Glu | Asp | Tyr | Leu | Ser | Tyr | Glu | Thr | Val | Phe | Glu | Asn |    |  |  |  |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |    |  |  |  |  |
| Gly | Thr | Arg | Thr | Leu | Thr | Arg | Val | Lys | Val | Gln | Asp | Leu | Val | Leu |    |  |  |  |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |    |  |  |  |  |
| Glu | Pro | Thr | Gln | Asn | Ile | Thr | Thr | Lys | Gly | Val | Ser | Val | Arg | Arg |    |  |  |  |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |    |  |  |  |  |
| Lys | Arg | Gln | Val | Tyr | Gly | Thr | Asp | Ser | Arg | Phe | Ser | Ile | Leu | Asp |    |  |  |  |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |    |  |  |  |  |
| Lys | Arg | Phe | Leu | Thr | Asn | Phe | Pro | Phe | Ser | Thr | Ala | Val | Lys | Leu |    |  |  |  |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |    |  |  |  |  |
| Ser | Thr | Gly | Cys | Ser | Gly | Ile | Leu | Ile | Ser | Pro | Gln | His | Val | Leu |    |  |  |  |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |    |  |  |  |  |
| Thr | Ala | Ala | His | Cys | Val | His | Asp | Gly | Lys | Asp | Tyr | Val | Lys | Gly |    |  |  |  |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |    |  |  |  |  |
| Ser | Lys | Lys | Leu | Arg | Val | Gly | Leu | Leu | Lys | Met | Arg | Asn | Lys | Ser |    |  |  |  |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |    |  |  |  |  |
| Gly | Gly | Lys | Lys | Arg | Arg | Gly | Ser | Lys | Arg | Ser | Arg | Arg | Glu | Ala |    |  |  |  |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |    |  |  |  |  |
| Ser | Gly | Gly | Asp | Gln | Arg | Glu | Gly | Thr | Arg | Glu | His | Leu | Gln | Glu |    |  |  |  |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |    |  |  |  |  |
| Arg | Ala | Lys | Gly | Gly | Arg | Arg | Arg | Lys | Lys | Ser | Gly | Arg | Gly | Gln |    |  |  |  |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |    |  |  |  |  |
| Arg | Ile | Ala | Glu | Gly | Arg | Pro | Ser | Phe | Gln | Trp | Thr | Arg | Val | Lys |    |  |  |  |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |    |  |  |  |  |
| Asn | Thr | His | Ile | Pro | Lys | Gly | Trp | Ala | Arg | Gly | Gly | Met | Gly | Asp |    |  |  |  |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |    |  |  |  |  |
| Ala | Thr | Leu | Asp | Tyr | Asp | Tyr | Ala | Leu | Leu | Glu | Leu | Lys | Arg | Ala |    |  |  |  |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |    |  |  |  |  |
| His | Lys | Lys | Lys | Tyr | Met | Glu | Leu | Gly | Ile | Ser | Pro | Thr | Ile | Lys |    |  |  |  |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |    |  |  |  |  |
| Lys | Met | Pro | Gly | Gly | Met | Ile | His | Phe | Ser | Gly | Phe | Asp | Asn | Asp |    |  |  |  |  |

|                                     |                         |     |
|-------------------------------------|-------------------------|-----|
| 305                                 | 310                     | 315 |
| Arg Ala Asp Gln Leu Val Tyr Arg Phe | Cys Ser Val Ser Asp Glu |     |
| 320                                 | 325                     | 330 |
| Ser Asn Asp Leu Leu Tyr Gln Tyr Cys | Asp Ala Glu Ser Gly Ser |     |
| 335                                 | 340                     | 345 |
| Thr Gly Ser Gly Val Tyr Leu Arg Leu | Lys Asp Pro Asp Lys Lys |     |
| 350                                 | 355                     | 360 |
| Asn Trp Lys Arg Lys Ile Ile Ala Val | Tyr Ser Gly His Gln Trp |     |
| 365                                 | 370                     | 375 |
| Val Asp Val His Gly Val Gln Lys Asp | Tyr Asn Val Ala Val Arg |     |
| 380                                 | 385                     | 390 |
| Ile Thr Pro Leu Lys Tyr Ala Gln Ile | Cys Leu Trp Ile His Gly |     |
| 395                                 | 400                     | 405 |
| Asn Asp Ala Asn Cys Ala Tyr Gly     |                         |     |
| 410                                 |                         |     |

<210> 297  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 297  
 gcatctgcag gagagagcga aggg 24

<210> 298  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 298  
 catcggtccc gtgaatccag aggc 24

<210> 299  
 <211> 45  
 <212> DNA  
 <213> Artificial Sequence

<220>  
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<400> 299  
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<210> 300

<211> 1869

<212> DNA

<213> Homo sapiens

<400> 300

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tgtccgattc tgattccggc aaggatccaa gcatggaatg ctgccgtcgg 150  
gcaactcctg gcacactgct cctctttctg gctttcctgc tcctgagttc 200  
caggaccgca cgctccgagg aggaccggga cggcctatgg gatgcctggg 250  
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gaatggcttc ctgtgtctaa tgaccctgac aacctatgtt cactcaagtg 500  
ccaagccaaa ggaacaacc tggttgttga actagcacct aaggcttag 550  
atggtacgcg ttgctataca gaatctttgg atatgtgcat cagtggttta 600  
tgccaaattg ttggctgcga tcaccagctg ggaagcaccg tcaaggaaga 650  
taactgtggg gtctgcaacg gagatgggtc cacctgccgg ctgggtccgag 700  
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gcatttcctt atggaagtag acatattcgc cttgtcttaa aaggctccta 800  
tcacttatat ctggaaacca aaacctcca ggggactaaa ggtgaaaaca 850  
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cagaaatttc cagacaaaga gatactgaga atggctggac cactcacagc 950  
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gtgctacgat ctgaggagca accgtgtggt tgctgaccaa tactgtcact 1150  
attaccaga gaacatcaaa cccaaacca agcttcagga gtgcaacttg 1200  
gatccttgct cagccagtga cggatacaag cagatcatgc cttatgacct 1250  
ctaccatccc cttcctcggg gggaggccac cccatggacc gcgtgctcct 1300

cctcgtgtgg ggggggcatc cagagccggg cagtttcttg tgtggaggag 1350  
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 ccctaagatg cccatcgccg agccctgcaa cttttttgac tggcctaaat 1450  
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 agataccgtg tggtcctctg catcgaccat cgaggaatgc acacaggagg 1550  
 ctgtagccca aaaacaaagc cccacataaa agaggaatgc atcgtaccca 1600  
 ctccctgcta taaacccaaa gagaaacttc cagtcgaggc caagttgcca 1650  
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 gccctcgtaa gttgtaaaag cacagactgt tctatatattg aaactgtttt 1750  
 gtttaaagaa agcagtgtct cactggttgt agctttcatg ggttctgaac 1800  
 taagtgtaat catctcacca aagctttttg gctctcaaat taaagattga 1850  
 ttagtttcaa aaaaaaaaaa 1869

<210> 301

<211> 525

<212> PRT

<213> Homo sapiens

<400> 301

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Glu | Cys | Cys | Arg | Arg | Ala | Thr | Pro | Gly | Thr | Leu | Leu | Leu | Phe | 1   | 5   | 10  | 15 |
| Leu | Ala | Phe | Leu | Leu | Leu | Ser | Ser | Arg | Thr | Ala | Arg | Ser | Glu | Glu | 20  | 25  | 30  |    |
| Asp | Arg | Asp | Gly | Leu | Trp | Asp | Ala | Trp | Gly | Pro | Trp | Ser | Glu | Cys | 35  | 40  | 45  |    |
| Ser | Arg | Thr | Cys | Gly | Gly | Gly | Ala | Ser | Tyr | Ser | Leu | Arg | Arg | Cys | 50  | 55  | 60  |    |
| Leu | Ser | Ser | Lys | Ser | Cys | Glu | Gly | Arg | Asn | Ile | Arg | Tyr | Arg | Thr | 65  | 70  | 75  |    |
| Cys | Ser | Asn | Val | Asp | Cys | Pro | Pro | Glu | Ala | Gly | Asp | Phe | Arg | Ala | 80  | 85  | 90  |    |
| Gln | Gln | Cys | Ser | Ala | His | Asn | Asp | Val | Lys | His | His | Gly | Gln | Phe | 95  | 100 | 105 |    |
| Tyr | Glu | Trp | Leu | Pro | Val | Ser | Asn | Asp | Pro | Asp | Asn | Pro | Cys | Ser | 110 | 115 | 120 |    |
| Leu | Lys | Cys | Gln | Ala | Lys | Gly | Thr | Thr | Leu | Val | Val | Glu | Leu | Ala | 125 | 130 | 135 |    |

|   |     |     |     |
|---|-----|-----|-----|
| Pro Lys Val Leu Asp Gly Thr Arg Cys Tyr Thr Glu Ser Leu Asp | 140 | 145 | 150 |
| Met Cys Ile Ser Gly Leu Cys Gln Ile Val Gly Cys Asp His Gln | 155 | 160 | 165 |
| Leu Gly Ser Thr Val Lys Glu Asp Asn Cys Gly Val Cys Asn Gly | 170 | 175 | 180 |
| Asp Gly Ser Thr Cys Arg Leu Val Arg Gly Gln Tyr Lys Ser Gln | 185 | 190 | 195 |
| Leu Ser Ala Thr Lys Ser Asp Asp Thr Val Val Ala Leu Pro Tyr | 200 | 205 | 210 |
| Gly Ser Arg His Ile Arg Leu Val Leu Lys Gly Pro Asp His Leu | 215 | 220 | 225 |
| Tyr Leu Glu Thr Lys Thr Leu Gln Gly Thr Lys Gly Glu Asn Ser | 230 | 235 | 240 |
| Leu Ser Ser Thr Gly Thr Phe Leu Val Asp Asn Ser Ser Val Asp | 245 | 250 | 255 |
| Phe Gln Lys Phe Pro Asp Lys Glu Ile Leu Arg Met Ala Gly Pro | 260 | 265 | 270 |
| Leu Thr Ala Asp Phe Ile Val Lys Ile Arg Asn Ser Gly Ser Ala | 275 | 280 | 285 |
| Asp Ser Thr Val Gln Phe Ile Phe Tyr Gln Pro Ile Ile His Arg | 290 | 295 | 300 |
| Trp Arg Glu Thr Asp Phe Phe Pro Cys Ser Ala Thr Cys Gly Gly | 305 | 310 | 315 |
| Gly Tyr Gln Leu Thr Ser Ala Glu Cys Tyr Asp Leu Arg Ser Asn | 320 | 325 | 330 |
| Arg Val Val Ala Asp Gln Tyr Cys His Tyr Tyr Pro Glu Asn Ile | 335 | 340 | 345 |
| Lys Pro Lys Pro Lys Leu Gln Glu Cys Asn Leu Asp Pro Cys Pro | 350 | 355 | 360 |
| Ala Ser Asp Gly Tyr Lys Gln Ile Met Pro Tyr Asp Leu Tyr His | 365 | 370 | 375 |
| Pro Leu Pro Arg Trp Glu Ala Thr Pro Trp Thr Ala Cys Ser Ser | 380 | 385 | 390 |
| Ser Cys Gly Gly Gly Ile Gln Ser Arg Ala Val Ser Cys Val Glu | 395 | 400 | 405 |
| Glu Asp Ile Gln Gly His Val Thr Ser Val Glu Glu Trp Lys Cys | 410 | 415 | 420 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Tyr | Thr | Pro | Lys | Met | Pro | Ile | Ala | Gln | Pro | Cys | Asn | Ile | Phe |
|     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |     | 435 |
| Asp | Cys | Pro | Lys | Trp | Leu | Ala | Gln | Glu | Trp | Ser | Pro | Cys | Thr | Val |
|     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     | 450 |
| Thr | Cys | Gly | Gln | Gly | Leu | Arg | Tyr | Arg | Val | Val | Leu | Cys | Ile | Asp |
|     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     | 465 |
| His | Arg | Gly | Met | His | Thr | Gly | Gly | Cys | Ser | Pro | Lys | Thr | Lys | Pro |
|     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| His | Ile | Lys | Glu | Glu | Cys | Ile | Val | Pro | Thr | Pro | Cys | Tyr | Lys | Pro |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |
| Lys | Glu | Lys | Leu | Pro | Val | Glu | Ala | Lys | Leu | Pro | Trp | Phe | Lys | Gln |
|     |     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |
| Ala | Gln | Glu | Leu | Glu | Glu | Gly | Ala | Ala | Val | Ser | Glu | Glu | Pro | Ser |
|     |     |     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |

<210> 302  
 <211> 1533  
 <212> DNA  
 <213> Homo sapiens

<400> 302  
 cggacgcgtg ggcggcggct gcggaactcc cgtggagggg ccggtgggcc 50  
 ctcgggcctg acagatggca gtggccactg cggcggcagt actggccgct 100  
 ctggggcggg cgctgtggct ggcggcccgc cggttcgtgg ggcccagggt 150  
 ccagcggctg cgcagaggcg gggaccccg cctcatgcac gggaagactg 200  
 tgctgatcac cggggcgaac agcggcctgg gccgcgccac ggccgcccag 250  
 ctactgcgcc tgggagcgcg ggtgatcatg ggctgccggg accgcgcgcg 300  
 cgccgaggag gcggcgggtc agctccgcgc cgagctccgc caggccgcgcg 350  
 agtgcgggcc agagcctggc gtcagcgggg tgggcgagct catagtccgcg 400  
 gagctggacc tcgcctcgct gcgctcggtg cgcgccttct gccaggaaat 450  
 gctccaggaa gagcctaggc tggatgtctt gatcaataac gcagggatct 500  
 tccagtgcc ttacatgaag actgaagatg ggtttgagat gcagttcgga 550  
 gtgaaccatc tggggcaactt tctactcacc aatcttctcc ttggactcct 600  
 caaaagttca gctcccagca ggattgtggt agtttcttcc aaactttata 650  
 aatacggaga catcaatctt gatgacttga acagtgaaca aagctataat 700  
 aaaagctttt gttatagccg gagcaaactg gctaacattc tttttaccag 750



ggaactagcc cgccgcttag aaggcacaaa tgtcaccgtc aatgtgttgc 800  
 atcctgggtat tgtacggaca aatctgggga ggcacataca cattccactg 850  
 ttggtcaaac cactcttcaa tttggtgtca tgggcttttt tcaaaactcc 900  
 agtagaaggt gccagactt ccattttattt ggcctcttca cctgaggtag 950  
 aaggagtgtc aggaagatac tttggggatt gtaaagagga agaactgttg 1000  
 cccaaagcta tggatgaatc tgttgcaaga aaactctggg atatcagtga 1050  
 agtgatgggtt ggcctgctaa aataggaaca aggagtaaaa gagctgttta 1100  
 taaaactgca tatcagttat atctgtgatc aggaatggtg tggattgaga 1150  
 acttgttact tgaagaaaaa gaattttgat attggaatag cctgctaaga 1200  
 ggtacatgtg ggtatttttg agttactgaa aaattatttt tgggataaga 1250  
 gaatttcagc aaagatgttt taaatatata tagtaagtat aatgaataat 1300  
 aagtacaatg aaaaatacaa ttatattgta aaattataac tgggcaagca 1350  
 tggatgacat attaatat ttcagaatta agtgactcaa agtgctatcg 1400  
 agagggtttt caagtatctt tgagtttcat ggccaaagtg ttaactagtt 1450  
 ttactacaat gtttgggtgt tgtgtggaaa ttatctgcct ggtgtgtgca 1500  
 cacaagtctt acttgaata aatttactgg tac 1533

<210> 303  
 <211> 336  
 <212> PRT  
 <213> Homo sapiens

<400> 303  
 Met Ala Val Ala Thr Ala Ala Ala Val Leu Ala Ala Leu Gly Gly  
 1 5 10 15  
 Ala Leu Trp Leu Ala Ala Arg Arg Phe Val Gly Pro Arg Val Gln  
 20 25 30  
 Arg Leu Arg Arg Gly Gly Asp Pro Gly Leu Met His Gly Lys Thr  
 35 40 45  
 Val Leu Ile Thr Gly Ala Asn Ser Gly Leu Gly Arg Ala Thr Ala  
 50 55 60  
 Ala Glu Leu Leu Arg Leu Gly Ala Arg Val Ile Met Gly Cys Arg  
 65 70 75  
 Asp Arg Ala Arg Ala Glu Glu Ala Ala Gly Gln Leu Arg Arg Glu  
 80 85 90  
 Leu Arg Gln Ala Ala Glu Cys Gly Pro Glu Pro Gly Val Ser Gly

| 95                                  | 100                     | 105 |
|-------------------------------------|-------------------------|-----|
| Val Gly Glu Leu Ile Val Arg Glu Leu | Asp Leu Ala Ser Leu Arg |     |
| 110                                 | 115                     | 120 |
| Ser Val Arg Ala Phe Cys Gln Glu Met | Leu Gln Glu Glu Pro Arg |     |
| 125                                 | 130                     | 135 |
| Leu Asp Val Leu Ile Asn Asn Ala Gly | Ile Phe Gln Cys Pro Tyr |     |
| 140                                 | 145                     | 150 |
| Met Lys Thr Glu Asp Gly Phe Glu Met | Gln Phe Gly Val Asn His |     |
| 155                                 | 160                     | 165 |
| Leu Gly His Phe Leu Leu Thr Asn Leu | Leu Leu Gly Leu Leu Lys |     |
| 170                                 | 175                     | 180 |
| Ser Ser Ala Pro Ser Arg Ile Val Val | Val Ser Ser Lys Leu Tyr |     |
| 185                                 | 190                     | 195 |
| Lys Tyr Gly Asp Ile Asn Phe Asp Asp | Leu Asn Ser Glu Gln Ser |     |
| 200                                 | 205                     | 210 |
| Tyr Asn Lys Ser Phe Cys Tyr Ser Arg | Ser Lys Leu Ala Asn Ile |     |
| 215                                 | 220                     | 225 |
| Leu Phe Thr Arg Glu Leu Ala Arg Arg | Leu Glu Gly Thr Asn Val |     |
| 230                                 | 235                     | 240 |
| Thr Val Asn Val Leu His Pro Gly Ile | Val Arg Thr Asn Leu Gly |     |
| 245                                 | 250                     | 255 |
| Arg His Ile His Ile Pro Leu Leu Val | Lys Pro Leu Phe Asn Leu |     |
| 260                                 | 265                     | 270 |
| Val Ser Trp Ala Phe Phe Lys Thr Pro | Val Glu Gly Ala Gln Thr |     |
| 275                                 | 280                     | 285 |
| Ser Ile Tyr Leu Ala Ser Ser Pro Glu | Val Glu Gly Val Ser Gly |     |
| 290                                 | 295                     | 300 |
| Arg Tyr Phe Gly Asp Cys Lys Glu Glu | Glu Leu Leu Pro Lys Ala |     |
| 305                                 | 310                     | 315 |
| Met Asp Glu Ser Val Ala Arg Lys Leu | Trp Asp Ile Ser Glu Val |     |
| 320                                 | 325                     | 330 |
| Met Val Gly Leu Leu Lys             |                         |     |
| 335                                 |                         |     |

<210> 304

<211> 521

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 20, 34, 62, 87, 221, 229  
<223> unknown base

<400> 304  
ggggattgta aagaggaagn actgtgccca aagntatgga tgaatctgtt 50  
gcaagaaaat tntgggatat cagtgaagtg atggttngcc tgctaaaata 100  
ggaacaagga gtaaaagagc tgtttataaa actgcatatc agttatatct 150  
gtgatcagga atgggtgtgga ttgagaactt gttacttgaa gaaaaagaat 200  
tttgatattg gaatagcctg ntaagaggna catgtgggta ttttggagtt 250  
actgaaaaat tatttttggg ataagagaat ttcagcaaag atgtttttaa 300  
tatatatagt aagtataatg aataataagt acaatgaaaa atacaattat 350  
attgtaaaat tataactggg caagcatgga tgacatatta atatttgtca 400  
gaattaagtg actcaaagtg ctatcgagag gtttttcaag tatctttgag 450  
tttcatggcc aaagtgttaa ctagttttac tacaatgttt ggtgtttgtg 500  
tggaattat ctgcctggct t 521

<210> 305  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 305  
ccaggaaatg ctccaggaag agcc 24

<210> 306  
<211> 26  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 306  
gcccatgaca ccaaattgaa gagtgg 26

<210> 307  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 307

aacgcaggga tcttccagtg cccttacatg aagactgaag atggg 45

<210> 308

<211> 1523

<212> DNA

<213> Homo sapiens

<400> 308

gagaggacga ggtgccgctg cctggagaat cctccgctgc cgtcggctcc 50  
cggagcccag ccctttccta acccaacca acctagccca gtcccagccg 100  
ccagcgcctg tccctgtcac ggaccccgagc gttaccatgc atcctgccgt 150  
cttctatcc ttaccgacc tcagatgctc cttctgctc ctggtaactt 200  
gggtttttac tctgtaca actgaaata caagtctgc tacagagaat 250  
atagatgaaa ttttaacaa tgctgatgtt gctttagtaa attttatgc 300  
tgactggtgt cgtttcagtc agatgttgca tccaatttt gaggaagctt 350  
ccgatgtcat taaggaagaa tttccaaatg aaaatcaagt agtgtttgcc 400  
agagttgatt gtgatcagca ctctgacata gccagagat acaggataag 450  
caaataccca accctcaaat tgtttcgtaa tgggatgatg atgaagagag 500  
aatacagggg tcagcgatca gtgaaagcat tggcagatta catcaggcaa 550  
caaaaaagtg accccattca agaaattcgg gacttagcag aaatcaccac 600  
tcttgatcgc agcaaaagaa atatcattgg atattttgag caaaaggact 650  
cggacaacta tagagttttt gaacgagtag cgaatatattt gcatgatgac 700  
tgtgcctttc tttctgcatt tggggatgtt tcaaaaccgg aaagatatag 750  
tggcgacaac ataatctaca aaccaccagg gcattctgct ccggatatgg 800  
tgtacttggg agctatgaca aattttgatg tgacttaca ttggattcaa 850  
gataaatgtg ttcctcttgt ccgagaaata acatttgaaa atggagagga 900  
attgacagaa gaaggactgc cttttctcat actctttcac atgaaagaag 950  
atacagaaag tttagaaata ttccagaatg aagtagctcg gcaattaata 1000  
agtgaaaaag gtacaataaa ctttttacat gccgattgtg acaaatttag 1050  
acatcctctt ctgcacatac agaaaactcc agcagattgt cctgtaatcg 1100  
ctattgacag ctttaggcatt atgtatgtgt ttggagactt caaagatgta 1150  
ttaattcctg gaaaactcaa gcaattcgta tttgacttac attctggaaa 1200  
actgcacaga gaattccatc atggacctga cccaactgat acagccccag 1250

gagagcaagc ccaagatgta gcaagcagtc cacctgagag ctccttccag 1300  
aaactagcac ccagtgaata taggtatact ctattgaggg atcgagatga 1350  
gctttaaaaa cttgaaaaac agtttgtaag cctttcaaca gcagcatcaa 1400  
cctacgtggt ggaaatagta aacctatatt ttcataattc tatgtgtatt 1450  
tttattttga ataaacagaa agaaatttaa aaaaaaaaaa aaaaaaaaaa 1500  
aaaaaaaaaa aaaaaaaaaa aaa 1523

<210> 309

<211> 406

<212> PRT

<213> Homo sapiens

<400> 309

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | His | Pro | Ala | Val | Phe | Leu | Ser | Leu | Pro | Asp | Leu | Arg | Cys | Ser |  |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |  |
| Leu | Leu | Leu | Leu | Val | Thr | Trp | Val | Phe | Thr | Pro | Val | Thr | Thr | Glu |  |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |  |
| Ile | Thr | Ser | Leu | Ala | Thr | Glu | Asn | Ile | Asp | Glu | Ile | Leu | Asn | Asn |  |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |  |
| Ala | Asp | Val | Ala | Leu | Val | Asn | Phe | Tyr | Ala | Asp | Trp | Cys | Arg | Phe |  |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |  |
| Ser | Gln | Met | Leu | His | Pro | Ile | Phe | Glu | Glu | Ala | Ser | Asp | Val | Ile |  |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |  |
| Lys | Glu | Glu | Phe | Pro | Asn | Glu | Asn | Gln | Val | Val | Phe | Ala | Arg | Val |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |  |
| Asp | Cys | Asp | Gln | His | Ser | Asp | Ile | Ala | Gln | Arg | Tyr | Arg | Ile | Ser |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |  |
| Lys | Tyr | Pro | Thr | Leu | Lys | Leu | Phe | Arg | Asn | Gly | Met | Met | Met | Lys |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |  |
| Arg | Glu | Tyr | Arg | Gly | Gln | Arg | Ser | Val | Lys | Ala | Leu | Ala | Asp | Tyr |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |
| Ile | Arg | Gln | Gln | Lys | Ser | Asp | Pro | Ile | Gln | Glu | Ile | Arg | Asp | Leu |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |
| Ala | Glu | Ile | Thr | Thr | Leu | Asp | Arg | Ser | Lys | Arg | Asn | Ile | Ile | Gly |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |
| Tyr | Phe | Glu | Gln | Lys | Asp | Ser | Asp | Asn | Tyr | Arg | Val | Phe | Glu | Arg |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |
| Val | Ala | Asn | Ile | Leu | His | Asp | Asp | Cys | Ala | Phe | Leu | Ser | Ala | Phe |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |

|   |     |     |     |
|---|-----|-----|-----|
| Gly Asp Val Ser Lys Pro Glu Arg Tyr Ser Gly Asp Asn Ile Ile | 200 | 205 | 210 |
| Tyr Lys Pro Pro Gly His Ser Ala Pro Asp Met Val Tyr Leu Gly | 215 | 220 | 225 |
| Ala Met Thr Asn Phe Asp Val Thr Tyr Asn Trp Ile Gln Asp Lys | 230 | 235 | 240 |
| Cys Val Pro Leu Val Arg Glu Ile Thr Phe Glu Asn Gly Glu Glu | 245 | 250 | 255 |
| Leu Thr Glu Glu Gly Leu Pro Phe Leu Ile Leu Phe His Met Lys | 260 | 265 | 270 |
| Glu Asp Thr Glu Ser Leu Glu Ile Phe Gln Asn Glu Val Ala Arg | 275 | 280 | 285 |
| Gln Leu Ile Ser Glu Lys Gly Thr Ile Asn Phe Leu His Ala Asp | 290 | 295 | 300 |
| Cys Asp Lys Phe Arg His Pro Leu Leu His Ile Gln Lys Thr Pro | 305 | 310 | 315 |
| Ala Asp Cys Pro Val Ile Ala Ile Asp Ser Phe Arg His Met Tyr | 320 | 325 | 330 |
| Val Phe Gly Asp Phe Lys Asp Val Leu Ile Pro Gly Lys Leu Lys | 335 | 340 | 345 |
| Gln Phe Val Phe Asp Leu His Ser Gly Lys Leu His Arg Glu Phe | 350 | 355 | 360 |
| His His Gly Pro Asp Pro Thr Asp Thr Ala Pro Gly Glu Gln Ala | 365 | 370 | 375 |
| Gln Asp Val Ala Ser Ser Pro Pro Glu Ser Ser Phe Gln Lys Leu | 380 | 385 | 390 |
| Ala Pro Ser Glu Tyr Arg Tyr Thr Leu Leu Arg Asp Arg Asp Glu | 395 | 400 | 405 |

Leu

<210> 310  
 <211> 182  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> 36, 48  
 <223> unknown base

<400> 310

attaaggaag aatttccaaa tgaaaatcaa gtagtntttg ccagagtnga 50  
ttgtgatcag cactctgaca tagcccagag atacaggata agcaaatacc 100  
caaccctcaa attgtttcgt aatgggatga tgatgaagag agaatacagg 150  
ggtcagcgat cagtgaagc attggcagat ta 182

<210> 311

<211> 598

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 38, 59, 140, 169, 174, 183, 282-283, 294-295, 319, 396

<223> unknown base

<400> 311

agaggcctct ctggaagttg tcccgggtgt tcgccgcngg agcccgggtc 50  
gagaggacna ggtgccgctg cctggagaat cctccgctgc cgtcggctcc 100  
cggagcccag ccctttccta acccaaccca acctagcccn gtcccagccg 150  
ccagcgctg tccctgtcnc gganccagc gtnaccatgc atcctgccgt 200  
cttcctatcc ttacccgacc tcagatgctc ccttctgctc ctggtaactt 250  
gggtttttac tcctgtaaca actgaaataa cngtcttga tacnnagaat 300  
atagatgaaa ttttaaacna tgctgatgtg gctttagtca atttttatgc 350  
tgactggtgt cgtttcagtc agatgtggca tccaattttt gaggangctt 400  
ccgatgtcat taaggaagaa tttccaaatg aaaatcaagt agtgtttgcc 450  
agagttgatt gtgatcagca ctctgacata gccagagat acaggataag 500  
caaataccca accctcaaat tgtttcgtaa tgggatgatg atgaagagag 550  
aatacagggg tcagcgatca gtgaaagcat tggcagatta catcaggc 598

<210> 312

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 312

tgagaggcct ctctggaagt tg 22

<210> 313

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 313

gtcagcgatc agtgaaaagc 19

<210> 314

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 314

ccagaatgaa gtagctcggc 20

<210> 315

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 315

ccgactcaaa atgcattgtc 20

<210> 316

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 316

catttggcag gaattgtcc 19

<210> 317

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 317

ggtgctatag gccaaggg 18

<210> 318

<211> 24

<212> DNA

<213> Artificial Sequence



<220>

<223> Synthetic oligonucleotide probe

<400> 318

ctgtatctct gggctatgtc agag 24

<210> 319

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 319

ctacatatataa tggcacatgt cagcc 25

<210> 320

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 320

cgtcttccta tccttaccgc acctcagatg ctcccttctg ctcttg 46

<210> 321

<211> 1333

<212> DNA

<213> Homo sapiens

<400> 321

gccacgcgt ccgatggcgt tcacgttcgc ggccttctgc tacatgctgg 50

cgctgctgct cactgccgcg ctcatcttct tcgccatttg gcacattata 100

gcatttgatg agctgaagac tgattacaag aatcctatag accagtgtaa 150

taccctgaat ccccttgtag tccagagta cctcatccac gctttcttct 200

gtgtcatgtt tctttgtgca gcagagtggc ttacactggg tctcaatatg 250

cccctcttgg catatcatat ttggagggtat atgagtagac cagtgatgag 300

tggcccagga ctctatgacc ctacaacat catgaatgca gatattctag 350

catattgtca gaaggaagga tgggtgcaaat tagcttttta tcttctagca 400

tttttttact acctatatgg catgatctat gtttttgtga gctcttagaa 450

caacacacag aagaattggc ccagttaagt gcatgcaaaa agccaccaa 500

tgaagggatt ctatccagca agatcctgtc caagagtagc ctgtggaatc 550

tgatcagtta ctttaaaaaa tgactcctta ttttttaa gtttccacat 600

ttttgcttgt ggaaagactg ttttcatatg ttatactcag ataaagattt 650  
 taaatggtat tacgtataaa ttaatatata atgattacct ctggtgttga 700  
 caggtttgaa cttgcacttc ttaaggaaca gccataatcc tctgaatgat 750  
 gcattaatta ctgactgtcc tagtacattg gaagcttttg tttataggaa 800  
 cttgtagggc tcatttttgg ttcattgaaa cagtatctaa ttataaatta 850  
 gctgtagata tcagggtgctt ctgatgaagt gaaaatgtat atctgactag 900  
 tgggaaactt catgggtttc ctcactgtgc atgtcgatga ttatatatgg 950  
 atacatttac aaaaaataaaa agcgggaatt ttcccttcgc ttgaatatta 1000  
 tccctgtata ttgcatgaat gagagatttc ccatatttcc atcagagtaa 1050  
 taaatatact tgctttaatt cttaagcata agtaaacaatg atataaaaaat 1100  
 atatgctgaa ttacttgtga agaatgcatt taaagctatt ttaaatgtgt 1150  
 ttttatttgt aagacattac ttattaagaa attggttatt atgcttactg 1200  
 ttctaactctg gtggtaaagg tattcttaag aatttgcagg tactacagat 1250  
 tttcaaaact gaatgagaga aaattgtata accatcctgc tgttccttta 1300  
 gtgcaataca ataaaactct gaaattaaga ctc 1333

<210> 322  
 <211> 144  
 <212> PRT  
 <213> Homo sapiens

<400> 322  
 Met Ala Phe Thr Phe Ala Ala Phe Cys Tyr Met Leu Ala Leu Leu  
 1 5 10 15  
 Leu Thr Ala Ala Leu Ile Phe Phe Ala Ile Trp His Ile Ile Ala  
 20 25 30  
 Phe Asp Glu Leu Lys Thr Asp Tyr Lys Asn Pro Ile Asp Gln Cys  
 35 40 45  
 Asn Thr Leu Asn Pro Leu Val Leu Pro Glu Tyr Leu Ile His Ala  
 50 55 60  
 Phe Phe Cys Val Met Phe Leu Cys Ala Ala Glu Trp Leu Thr Leu  
 65 70 75  
 Gly Leu Asn Met Pro Leu Leu Ala Tyr His Ile Trp Arg Tyr Met  
 80 85 90  
 Ser Arg Pro Val Met Ser Gly Pro Gly Leu Tyr Asp Pro Thr Thr  
 95 100 105

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Met | Asn | Ala | Asp | Ile | Leu | Ala | Tyr | Cys | Gln | Lys | Glu | Gly | Trp |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |
| Cys | Lys | Leu | Ala | Phe | Tyr | Leu | Leu | Ala | Phe | Phe | Tyr | Tyr | Leu | Tyr |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |
| Gly | Met | Ile | Tyr | Val | Leu | Val | Ser | Ser |     |     |     |     |     |     |
|     |     |     |     | 140 |     |     |     |     |     |     |     |     |     |     |

<210> 323  
 <211> 477  
 <212> DNA  
 <213> Homo sapiens

<400> 323  
 attatagcat ttgatgagct gaagactgat tacaagatcc tatagaccag 50  
 tgtaataccc tgaatcccct tgtactccca gactaccta tccacgcttt 100  
 cttctgtgtc atgtttcttt gtgcagcaga gtgggttaca ctgggtctca 150  
 atatgcccct cttggcatat catatttggg ggtatatgag tagaccagt 200  
 atgagtggcc caggactcta tgaccctaca accatcatga atgcagatat 250  
 tctagcatat tgtcagaagg aaggatgggtg caaattagct tttatcttc 300  
 tagcattttt ttactaccta tatggcatga tctatgtttt ggtgagctct 350  
 tagaacaaca cacagaagaa ttggtccagt taagtgcattg caaaaagcca 400  
 ccaaataaag ggattctatc cagcaagatc ctgtccaaga gtagcctgtg 450  
 gaatctgatc agttacttta aaaaatg 477

<210> 324  
 <211> 43  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 324  
 tgtaaaacga cggccagtta aatagacctg caattattaa tct 43

<210> 325  
 <211> 41  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 325  
 caggaaacag ctatgaccac ctgcacacct gcaaattccat t 41

<210> 326  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 326  
gtgcagcaga gtggcttaca 20

<210> 327  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 327  
actggaccaa ttcttctgtg 20

<210> 328  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 328  
gatattctag catattgtca gaaggaagga tgggtgcaaat tagct 45

<210> 329  
<211> 1174  
<212> DNA  
<213> Homo sapiens

<400> 329  
cggacgcgtg ggggaaaccc ttccgagaaa acagcaacaa gctgagctgc 50  
tgtgacagag gggaacaaga tggcggcgcc gaaggggagc ctctgggtga 100  
ggacccaact ggggctcccg ccgctgctgc tgctgacat ggcccttgcc 150  
ggagggttcgg ggaccgcttc ggctgaagca ttgactcgg tcttgggtga 200  
tacggcgtct tgccaccggg cctgtcagtt gacctaccc ttgcacacct 250  
accctaagga agaggagttg tacgcatgtc agagaggttg caggctgttt 300  
tcaatttgtc agtttgtgga tgatggaatt gacttaaata gaactaaatt 350  
ggaatgtgaa tctgcatgta cagaagcata ttccaatct gatgagcaat 400  
atgcttgcca tcttgggtgc cagaatcagc tgccattcgc tgaactgaga 450

caagaacaac ttatgtccct gatgccaaaa atgcacctac tctttcctct 500  
 aactctgggtg aggtcattct ggagtgacat gatggactcc gcacagagct 550  
 tcataacctc ttcattggact ttttatcttc aagccgatga cggaaaaata 600  
 gttatattcc agtctaagcc agaaatccag tacgcaccac atttgagca 650  
 ggagcctaca aatttgagag aatcatctct aagcaaaatg tcctatctgc 700  
 aaatgagaaa ttcacaagcg cacaggaatt ttcttgaaga tggagaaagt 750  
 gatggctttt taagatgcct ctctcttaac tctgggtgga ttttaactac 800  
 aactcttgct ctctcgggtga tggattgct ttggatttgt tgtgcaactg 850  
 ttgctacagc tgtggagcag tatgttcct ctgagaagct gagtatctat 900  
 ggtgacttgg agtttatgaa tgaacaaaag ctaaacagat atccagcttc 950  
 ttctcttggtg gttgttagat ctaaaactga agatcatgaa gaagcagggc 1000  
 ctctacctac aaaagtgaat cttgctcatt ctgaaattta agcatttttc 1050  
 ttttaaaaga caagtgaat agacatctaa aattccactc ctcatagagc 1100  
 ttttaaaatg gtttcattgg atataggcct taagaaatca ctataaaatg 1150  
 caaataaagt tactcaaatc tgtg 1174

<210> 330  
 <211> 323  
 <212> PRT  
 <213> Homo sapiens

<400> 330  
 Met Ala Ala Pro Lys Gly Ser Leu Trp Val Arg Thr Gln Leu Gly  
 1 5 10 15  
 Leu Pro Pro Leu Leu Leu Thr Met Ala Leu Ala Gly Gly Ser  
 20 25 30  
 Gly Thr Ala Ser Ala Glu Ala Phe Asp Ser Val Leu Gly Asp Thr  
 35 40 45  
 Ala Ser Cys His Arg Ala Cys Gln Leu Thr Tyr Pro Leu His Thr  
 50 55 60  
 Tyr Pro Lys Glu Glu Glu Leu Tyr Ala Cys Gln Arg Gly Cys Arg  
 65 70 75  
 Leu Phe Ser Ile Cys Gln Phe Val Asp Asp Gly Ile Asp Leu Asn  
 80 85 90  
 Arg Thr Lys Leu Glu Cys Glu Ser Ala Cys Thr Glu Ala Tyr Ser  
 95 100 105

|                                     |                         |
|-------------------------------------|-------------------------|
| Gln Ser Asp Glu Gln Tyr Ala Cys His | Leu Gly Cys Gln Asn Gln |
| 110                                 | 115 120                 |
| Leu Pro Phe Ala Glu Leu Arg Gln Glu | Gln Leu Met Ser Leu Met |
| 125                                 | 130 135                 |
| Pro Lys Met His Leu Leu Phe Pro Leu | Thr Leu Val Arg Ser Phe |
| 140                                 | 145 150                 |
| Trp Ser Asp Met Met Asp Ser Ala Gln | Ser Phe Ile Thr Ser Ser |
| 155                                 | 160 165                 |
| Trp Thr Phe Tyr Leu Gln Ala Asp Asp | Gly Lys Ile Val Ile Phe |
| 170                                 | 175 180                 |
| Gln Ser Lys Pro Glu Ile Gln Tyr Ala | Pro His Leu Glu Gln Glu |
| 185                                 | 190 195                 |
| Pro Thr Asn Leu Arg Glu Ser Ser Leu | Ser Lys Met Ser Tyr Leu |
| 200                                 | 205 210                 |
| Gln Met Arg Asn Ser Gln Ala His Arg | Asn Phe Leu Glu Asp Gly |
| 215                                 | 220 225                 |
| Glu Ser Asp Gly Phe Leu Arg Cys Leu | Ser Leu Asn Ser Gly Trp |
| 230                                 | 235 240                 |
| Ile Leu Thr Thr Thr Leu Val Leu Ser | Val Met Val Leu Leu Trp |
| 245                                 | 250 255                 |
| Ile Cys Cys Ala Thr Val Ala Thr Ala | Val Glu Gln Tyr Val Pro |
| 260                                 | 265 270                 |
| Ser Glu Lys Leu Ser Ile Tyr Gly Asp | Leu Glu Phe Met Asn Glu |
| 275                                 | 280 285                 |
| Gln Lys Leu Asn Arg Tyr Pro Ala Ser | Ser Leu Val Val Val Arg |
| 290                                 | 295 300                 |
| Ser Lys Thr Glu Asp His Glu Glu Ala | Gly Pro Leu Pro Thr Lys |
| 305                                 | 310 315                 |
| Val Asn Leu Ala His Ser Glu Ile     |                         |
| 320                                 |                         |

<210> 331

<211> 350

<212> DNA

<213> Homo sapiens

<400> 331

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gcacacctac cctaaggaag aggagttgta cgcatgtcag agaggttgca 100

ggctgttttc aatttgtcag tttgtggatg atggaattga cttaaatacga 150

actaaattgg aatgtgaatc tgcattgtaca gaagcatatt cccaatctga 200  
tgagcaatat gcttgccatc ttggttgcca gaatcagctg ccattcgctg 250  
aactgagaca agaacaactt atgtccctga tgccaaaaat gcacctactc 300  
tttctctata ctctgggtgag gtcattctgg agtgacatga tggactccgc 350

<210> 332  
<211> 562  
<212> DNA  
<213> Homo sapiens

<220>  
<221> unsure  
<222> 47  
<223> unknown base

<400> 332  
cacactggcc ggatctttta gaggcctttg accttgacca agggtcngga 50  
aaacagcaac aagctgagct gctgtgacag aggaacaag atggcggcgc 100  
cgaagggagc ctttgggtga ggaccaact ggggctcccg ccgctgctgc 150  
tgctgaccat ggccttggcc ggagggtcgg ggaccgcttc ggctgaagca 200  
tttgactcgg tcttgggtga tacggcgtct tgccaccggg cctgtcagtt 250  
gacctacccc ttgcacacct accctaagga agaggagttg tacgcatgtc 300  
agagagggtg caggctgttt tcaatttgct agtttgtgga tgatggaatt 350  
gacttaaata gaactaaatt ggaatgtgaa tctgcatgta cagaagcata 400  
ttcccaatct gatgagcaat atgcttgcca tcttggttgc cagaatcagc 450  
tgccattcgc tgaactgaga caagaacaac ttatgtccct gatgccaaa 500  
atgcacctac tctttcctct aactctgggt aggtcattct ggagtgcacat 550  
gatggactcc gc 562

<210> 333  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 333  
acaagctgag ctgctgtgac ag 22

<210> 334  
<211> 22

<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 334  
tgattctggc aaccaagatg gc 22

<210> 335  
<211> 40  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 335  
atggccttgg ccggagggtc ggggaccgct tcggctgaag 40

<210> 336  
<211> 1885  
<212> DNA  
<213> Homo sapiens

<400> 336  
gcgagggtggc gatcgctgag aggcaggagg gccgaggcgg gcctgggagg 50  
cggcccgagg gtggggcgcc gctggggccg gcccgcacgg gcttcatctg 100  
agggcgcacg gccgcgcacc gagcgtgcgg actggcctcc caagcgtggg 150  
gcgacaagct gccggagctg caatgggccg cggctgggga ttcttgtttg 200  
gcctcctggg cgccgtgtgg ctgctcagct cgggccacgg agaggagcag 250  
cccccggaga cagcggcaca gaggtgcttc tgccaggtta gtggttactt 300  
ggatgattgt acctgtgatg ttgaaacat tgatagattt aataactaca 350  
ggcttttccc aagactacaa aaacttcttg aaagtgacta ctttaggtat 400  
tacaaggtaa acctgaagag gccgtgtcct ttctggaatg acatcagcca 450  
gtgtggaaga agggactgtg ctgtcaaacc atgtcaatct gatgaagttc 500  
ctgatggaat taaatctgcg agctacaagt attctgaaga agccaataat 550  
ctcattgaag aatgtgaaca agctgaacga cttggagcag tggatgaatc 600  
tctgagttag gaaacacaga aggctgttct tcagtggacc aagcatgatg 650  
attcttcaga taacttctgt gaagctgatg acattcagtc ccctgaagct 700  
gaatatgtag atttgcttct taatcctgag cgctacactg gttacaaggg 750  
accagatgct tggaaaatat ggaatgtcat ctacgaagaa aactgtttta 800



agccacagac aattaaaga cctttaaatc ctttggcttc tggtaagg 850  
 acaagtgaag agaacacttt ttacagttgg ctagaaggtc tctgtgtaga 900  
 aaaaagagca ttctacagac ttatatctgg cctacatgca agcattaatg 950  
 tgcatttgag tgcaagatat cttttacaag agacctgggt agaaaagaaa 1000  
 tggggacaca acattacaga atttcaacag cgatttgatg gaattttgac 1050  
 tgaaggagaa ggtccaagaa ggcttaagaa cttgtatttt ctctacttaa 1100  
 tagaactaag ggctttatcc aaagtgttac cattcttcga gcgcccagat 1150  
 tttcaactct ttactggaaa taaaattcag gatgaggaaa acaaaatgtt 1200  
 acttctggaa atacttcatg aaatcaagtc atttcctttg cattttgatg 1250  
 agaattcatt ttttgctggg gataaaaaag aagcacacaa actaaaggag 1300  
 gactttcgac tgcattttag aaatatttca agaattatgg attgtgttgg 1350  
 ttgttttaaa tgtcgtctgt ggggaaagct tcagactcag ggtttgggca 1400  
 ctgctctgaa gatcttattt tctgagaaat tgatagcaaa tatgccagaa 1450  
 agtggaccta gttatgaatt ccatctaacc agacaagaaa tagtatcatt 1500  
 attcaacgca tttggaagaa tttctacaag tgtgaaagaa ttagaaaact 1550  
 tcaggaactt gttacagaat attcattaaa gaaaacaagc tgatatgtgc 1600  
 ctgtttctgg acaatggagg cgaaagagtg gaatttcatt caaaggcata 1650  
 atagcaatga cagtcttaag ccaaacattt tatataaagt tgcttttgta 1700  
 aaggagaatt atattgtttt aagtaaacac atttttaaaa attgtgttaa 1750  
 gtctatgtat aatactactg tgagtaaaaag taatacttta ataatgtggt 1800  
 acaaatttta aagttaata ttgaataaaa ggaggattat caaattaaaa 1850  
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaa 1885

<210> 337

<211> 468

<212> PRT

<213> Homo sapiens

<400> 337

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Arg | Gly | Trp | Gly | Phe | Leu | Phe | Gly | Leu | Leu | Gly | Ala | Val |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Leu | Leu | Ser | Ser | Gly | His | Gly | Glu | Glu | Gln | Pro | Pro | Glu | Thr |
|     |     |     |     | 20  |     |     |     | 25  |     |     |     |     |     | 30  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ala | Ala | Gln | Arg | Cys | Phe | Cys | Gln | Val | Ser | Gly | Tyr | Leu | Asp | Asp |  |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |  |
| Cys | Thr | Cys | Asp | Val | Glu | Thr | Ile | Asp | Arg | Phe | Asn | Asn | Tyr | Arg |  |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |  |
| Leu | Phe | Pro | Arg | Leu | Gln | Lys | Leu | Leu | Glu | Ser | Asp | Tyr | Phe | Arg |  |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |  |
| Tyr | Tyr | Lys | Val | Asn | Leu | Lys | Arg | Pro | Cys | Pro | Phe | Trp | Asn | Asp |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |  |
| Ile | Ser | Gln | Cys | Gly | Arg | Arg | Asp | Cys | Ala | Val | Lys | Pro | Cys | Gln |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |  |
| Ser | Asp | Glu | Val | Pro | Asp | Gly | Ile | Lys | Ser | Ala | Ser | Tyr | Lys | Tyr |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |  |
| Ser | Glu | Glu | Ala | Asn | Asn | Leu | Ile | Glu | Glu | Cys | Glu | Gln | Ala | Glu |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |
| Arg | Leu | Gly | Ala | Val | Asp | Glu | Ser | Leu | Ser | Glu | Glu | Thr | Gln | Lys |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |
| Ala | Val | Leu | Gln | Trp | Thr | Lys | His | Asp | Asp | Ser | Ser | Asp | Asn | Phe |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |
| Cys | Glu | Ala | Asp | Asp | Ile | Gln | Ser | Pro | Glu | Ala | Glu | Tyr | Val | Asp |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |
| Leu | Leu | Leu | Asn | Pro | Glu | Arg | Tyr | Thr | Gly | Tyr | Lys | Gly | Pro | Asp |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |
| Ala | Trp | Lys | Ile | Trp | Asn | Val | Ile | Tyr | Glu | Glu | Asn | Cys | Phe | Lys |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| Pro | Gln | Thr | Ile | Lys | Arg | Pro | Leu | Asn | Pro | Leu | Ala | Ser | Gly | Gln |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| Gly | Thr | Ser | Glu | Glu | Asn | Thr | Phe | Tyr | Ser | Trp | Leu | Glu | Gly | Leu |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Cys | Val | Glu | Lys | Arg | Ala | Phe | Tyr | Arg | Leu | Ile | Ser | Gly | Leu | His |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |
| Ala | Ser | Ile | Asn | Val | His | Leu | Ser | Ala | Arg | Tyr | Leu | Leu | Gln | Glu |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |
| Thr | Trp | Leu | Glu | Lys | Lys | Trp | Gly | His | Asn | Ile | Thr | Glu | Phe | Gln |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |
| Gln | Arg | Phe | Asp | Gly | Ile | Leu | Thr | Glu | Gly | Glu | Gly | Pro | Arg | Arg |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |
| Leu | Lys | Asn | Leu | Tyr | Phe | Leu | Tyr | Leu | Ile | Glu | Leu | Arg | Ala | Leu |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |  |

Ser Lys Val Leu Pro Phe Phe Glu Arg Pro Asp Phe Gln Leu Phe  
 320 325 330  
 Thr Gly Asn Lys Ile Gln Asp Glu Glu Asn Lys Met Leu Leu Leu  
 335 340 345  
 Glu Ile Leu His Glu Ile Lys Ser Phe Pro Leu His Phe Asp Glu  
 350 355 360  
 Asn Ser Phe Phe Ala Gly Asp Lys Lys Glu Ala His Lys Leu Lys  
 365 370 375  
 Glu Asp Phe Arg Leu His Phe Arg Asn Ile Ser Arg Ile Met Asp  
 380 385 390  
 Cys Val Gly Cys Phe Lys Cys Arg Leu Trp Gly Lys Leu Gln Thr  
 395 400 405  
 Gln Gly Leu Gly Thr Ala Leu Lys Ile Leu Phe Ser Glu Lys Leu  
 410 415 420  
 Ile Ala Asn Met Pro Glu Ser Gly Pro Ser Tyr Glu Phe His Leu  
 425 430 435  
 Thr Arg Gln Glu Ile Val Ser Leu Phe Asn Ala Phe Gly Arg Ile  
 440 445 450  
 Ser Thr Ser Val Lys Glu Leu Glu Asn Phe Arg Asn Leu Leu Gln  
 455 460 465  
 Asn Ile His

<210> 338

<211> 507

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 101, 263, 376, 397, 426

<223> unknown base

<400> 338

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ttaaaagacc tttaaactct ttggcttctg gtcaagggac aagtgaagag 100

nacacttttt acagttggct agaaggtctc tgtgtagaaa aaagagcatt 150

ctacagactt atatctggcc tacatgcaag cattaatgtg catttgagtg 200

caagatatct ttacaagag acctggttag aaaagaaatg gggacacaac 250

attacagaat ttnaacagcg atttgatgga attttgactg aaggagaagg 300

tccaagaagg cttaagaact tgtattttct ctacttaata gaactaaggg 350

ctttatccaa agtggtacca ttcttngagc gccagattt tcaactnttt 400  
actggaaata aaattcagga tgaggnaaac aaaatgttac ttttggaat 450  
acttcatgaa atcaagtcac ttcttttga ttttgatgag aattcatttt 500  
tttgctg 507

<210> 339

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 339

aagctgccgg agctgcaatg 20

<210> 340

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 340

ttgcttctta atcctgagcg c 21

<210> 341

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 341

aaaggaggac tttcgactgc 20

<210> 342

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 342

agagattcat ccactgctcc aagtcg 26

<210> 343

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 343

tgtccagaaa caggcacata tcagc 25

<210> 344

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 344

agacagcggc acagaggtgc ttctgccagg ttagtggtta cttggatgat 50

<210> 345

<211> 1486

<212> DNA

<213> Homo sapiens

<400> 345

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gatgggaggg aaagtgaaga aaacagaaaa ggagagggac agaggccaga 100  
ggactttctca tactggacag aaaccgatca ggcatggaac tcccccttctg 150  
cactcacctg ttcttgcccc tgggtgttct gacaggtctc tgctccccct 200  
ttaacctgga tgaacatcac ccacgcctat tcccagggcc accagaagct 250  
gaatttgat acagtgtctt acaacatgtt gggggtggac agcgatggat 300  
gctggtgggc gccccctggg atgggccttc aggcgaccgg aggggggacg 350  
tttatcgctg cctgtaggg ggggccaca atgccccatg tgccaagggc 400  
cacttaggtg actaccaact gggaaattca tctcatctg ctgtgaatat 450  
gcacctgggg atgtctctgt tagagacaga tggatgatgg ggattcatgg 500  
tgagctaagg agagggtggt ggcagtgtct ctgaagggtcc ataaaagaaa 550  
aaagagaagt gtggttaagg aaaatggtct gtgtggagg gtcaaggagt 600  
taaaaaccct agaaagcaaa aggtaggtaa tgtcaggag tagtcttcat 650  
gcctccttca actgggagca tgttctgagg gtgccctccc aagcctggga 700  
gtaactatct ccccatccc caggcctgtg cccctctctg gtctcgtgct 750  
tgtggcagct ctgtcttcag ttctgggata tgtgcccgtg tggatgcttc 800  
attccagcct cagggaagcc tggcaccac tgccaacgt gagccagagg 850

aaggctgagt acttggttcc cagaaggaga tactgggtgg gaaaaagatg 900  
gggcaaagcg gtatgatgcc tggcaaaggg cctgcatggc taccctcatt 950  
gctacctaata gtgcttgcaa aagctccatg tttcctaaca gattcagact 1000  
cctggccagg tgtggtggcc cacacctgta attctagcac tttgggaggc 1050  
caaggtgggc agatcacttg aggtcaggag ttcaagacca gcctggccaa 1100  
catggtgaaa ctccatctct actaaaaaaa aaaaaatata aaaattagct 1150  
gggtgcgcta gtgcatgcct gtaatctcat ctactcgga ggctaagaca 1200  
ggagactctc acttcaaccc aggaggtgga ggttgcggtg agccaagatt 1250  
gtgcctctgc actctagcgt gggtagacaga gtaagcgaga ctccatctca 1300  
aaaataataa taataataat tcagactcct tatcaggagt ccatgatctg 1350  
gcctggcaca gtaactcatg cctgtaatcc caacattttg ggaggccaac 1400  
gcaggaggat tgcttgaggt ctggaggttt gagaccagcc tgggcaacat 1450  
agaaagaccc catctctaaa taaatgtttt aaaaat 1486

<210> 346

<211> 124

<212> PRT

<213> Homo sapiens

<400> 346

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Glu | Leu | Pro | Phe | Val | Thr | His | Leu | Phe | Leu | Pro | Leu | Val | Phe | 1   | 5   | 10  | 15 |
| Leu | Thr | Gly | Leu | Cys | Ser | Pro | Phe | Asn | Leu | Asp | Glu | His | His | Pro | 20  | 25  | 30  |    |
| Arg | Leu | Phe | Pro | Gly | Pro | Pro | Glu | Ala | Glu | Phe | Gly | Tyr | Ser | Val | 35  | 40  | 45  |    |
| Leu | Gln | His | Val | Gly | Gly | Gly | Gln | Arg | Trp | Met | Leu | Val | Gly | Ala | 50  | 55  | 60  |    |
| Pro | Trp | Asp | Gly | Pro | Ser | Gly | Asp | Arg | Arg | Gly | Asp | Val | Tyr | Arg | 65  | 70  | 75  |    |
| Cys | Pro | Val | Gly | Gly | Ala | His | Asn | Ala | Pro | Cys | Ala | Lys | Gly | His | 80  | 85  | 90  |    |
| Leu | Gly | Asp | Tyr | Gln | Leu | Gly | Asn | Ser | Ser | His | Pro | Ala | Val | Asn | 95  | 100 | 105 |    |
| Met | His | Leu | Gly | Met | Ser | Leu | Leu | Glu | Thr | Asp | Gly | Asp | Gly | Gly | 110 | 115 | 120 |    |

Phe Met Val Ser

<210> 347  
<211> 509  
<212> DNA  
<213> Homo sapiens

<220>  
<221> unsure  
<222> 22  
<223> unknown base

<400> 347  
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ggcatggaac tccccttcgt cactcacctg ttcttgcccc tgggtgttcct 200  
gacaggtctc tgctccccct ttaacctgga tgaacatcac ccacgcctat 250  
tcccagggcc accagaagct gaatttggat acagtgtctt acaacatgtt 300  
gggggtggac agcgatggat gctggtgggc gccccctggg atgggccttc 350  
aggcgaccgg aggggggacg tttatcgctg ccctgtaggg ggggcccaca 400  
atgccccatg tgccaagggc cacttaggtg actaccaact gggaaattca 450  
tctcatcctg ctgtgaatat gcacctgggg atgtctctgt tagagacaga 500  
tggtgatgg 509

<210> 348  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 348  
agggacagag gccagaggac ttc 23

<210> 349  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 349  
caggtgcata ttcacagcag gatg 24

<210> 350  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 350  
ggaactcccc ttcgtcactc acctgttctt gcccttggtg ttcct 45

<210> 351  
<211> 2056  
<212> DNA  
<213> Homo sapiens

<400> 351  
aaagttacat tttctctgga actctcctag gccactccct gctgatgcaa 50  
catctggggt tgggcagaaa ggagggtgct tcggagcccg ccctttctga 100  
gcttctctggg ccggtcttag aacaattcag gcttcgctgc gactcagacc 150  
tcagctccaa catatgcatt ctgaagaaag atggctgaga tggacagaat 200  
gctttatattt ggaaagaaac aatgttctag gtcaaactga gtctaccaa 250  
tgcagacttt cacaatgggt ctagaagaaa tctggacaag tcttttcatg 300  
tggtttttct acgcattgat tccatgtttg ctcacagatg aagtggccat 350  
tctgcctgcc cctcagaacc tctctgtact ctcaaccaac atgaagcatc 400  
tcttgatgtg gagcccagtg atcgcgcctg gagaaacagt gtactattct 450  
gtcgaatacc agggggagta cgagagcctg tacacgagcc acatctggat 500  
cccagcagc tgggtgtcac tcaactgaagg tcttgagtgt gatgtcactg 550  
atgacatcac ggccactgtg ccatacaacc ttcgtgtcag ggccacattg 600  
ggctcacaga cctcagcctg gagcatcctg aagcatccct ttaatagaaa 650  
ctcaaccatc cttaccgcac ctgggatgga gatcaccaaa gatggcttcc 700  
acctggttat tgagctggag gacctggggc ccagtttga gttccttgtg 750  
gcctactgga ggaggagacc tggtgccgag gaacatgtca aaatggtgag 800  
gagtgggggt attccagtgc acctagaaac catggagcca ggggctgcat 850  
actgtgtgaa ggcccagaca ttcgtgaagg ccattgggag gtacagcgcc 900  
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cactgttcgt ctggaatatg ggccggctgc tccagtactc ctgttgcccc 1050  
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 aatcagctgc agaagggagg aggtggatgc ctgtgccacg gctgtgatgt 1150  
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 ggctgccact tgctggctga gcaaccctgg gaaaagtgc ttcacccctt 1450  
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 acggaggatc catgaactac tgtaaagtgt tgacagtgtg tgcacactgc 1900  
 agacagcagg tgaaatgtat gtgtgcaatg cgacgagaat gcagaagtca 1950  
 gtaacatgtg catgtttgtt gtgtcctttt tttctgttg taaagtacag 2000  
 aattcagcaa ataaaaaggg ccaccctggc caaaagcggg aaaaaaaaaa 2050  
 aaaaaa 2056

<210> 352

<211> 311

<212> PRT

<213> Homo sapiens

<400> 352

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gln | Thr | Phe | Thr | Met | Val | Leu | Glu | Glu | Ile | Trp | Thr | Ser | Leu |
| 1   |     |     |     |     | 5   |     |     |     |     | 10  |     |     |     | 15  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Met | Trp | Phe | Phe | Tyr | Ala | Leu | Ile | Pro | Cys | Leu | Leu | Thr | Asp |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Glu | Val | Ala | Ile | Leu | Pro | Ala | Pro | Gln | Asn | Leu | Ser | Val | Leu | Ser |  | 35  | 40  | 45  |
| Thr | Asn | Met | Lys | His | Leu | Leu | Met | Trp | Ser | Pro | Val | Ile | Ala | Pro |  | 50  | 55  | 60  |
| Gly | Glu | Thr | Val | Tyr | Tyr | Ser | Val | Glu | Tyr | Gln | Gly | Glu | Tyr | Glu |  | 65  | 70  | 75  |
| Ser | Leu | Tyr | Thr | Ser | His | Ile | Trp | Ile | Pro | Ser | Ser | Trp | Cys | Ser |  | 80  | 85  | 90  |
| Leu | Thr | Glu | Gly | Pro | Glu | Cys | Asp | Val | Thr | Asp | Asp | Ile | Thr | Ala |  | 95  | 100 | 105 |
| Thr | Val | Pro | Tyr | Asn | Leu | Arg | Val | Arg | Ala | Thr | Leu | Gly | Ser | Gln |  | 110 | 115 | 120 |
| Thr | Ser | Ala | Trp | Ser | Ile | Leu | Lys | His | Pro | Phe | Asn | Arg | Asn | Ser |  | 125 | 130 | 135 |
| Thr | Ile | Leu | Thr | Arg | Pro | Gly | Met | Glu | Ile | Thr | Lys | Asp | Gly | Phe |  | 140 | 145 | 150 |
| His | Leu | Val | Ile | Glu | Leu | Glu | Asp | Leu | Gly | Pro | Gln | Phe | Glu | Phe |  | 155 | 160 | 165 |
| Leu | Val | Ala | Tyr | Trp | Arg | Arg | Glu | Pro | Gly | Ala | Glu | Glu | His | Val |  | 170 | 175 | 180 |
| Lys | Met | Val | Arg | Ser | Gly | Gly | Ile | Pro | Val | His | Leu | Glu | Thr | Met |  | 185 | 190 | 195 |
| Glu | Pro | Gly | Ala | Ala | Tyr | Cys | Val | Lys | Ala | Gln | Thr | Phe | Val | Lys |  | 200 | 205 | 210 |
| Ala | Ile | Gly | Arg | Tyr | Ser | Ala | Phe | Ser | Gln | Thr | Glu | Cys | Val | Glu |  | 215 | 220 | 225 |
| Val | Gln | Gly | Glu | Ala | Ile | Pro | Leu | Val | Leu | Ala | Leu | Phe | Ala | Phe |  | 230 | 235 | 240 |
| Val | Gly | Phe | Met | Leu | Ile | Leu | Val | Val | Val | Pro | Leu | Phe | Val | Trp |  | 245 | 250 | 255 |
| Lys | Met | Gly | Arg | Leu | Leu | Gln | Tyr | Ser | Cys | Cys | Pro | Val | Val | Val |  | 260 | 265 | 270 |
| Leu | Pro | Asp | Thr | Leu | Lys | Ile | Thr | Asn | Ser | Pro | Gln | Lys | Leu | Ile |  | 275 | 280 | 285 |
| Ser | Cys | Arg | Arg | Glu | Glu | Val | Asp | Ala | Cys | Ala | Thr | Ala | Val | Met |  | 290 | 295 | 300 |
| Ser | Pro | Glu | Glu | Leu | Leu | Arg | Ala | Trp | Ile | Ser |     |     |     |     |  | 305 | 310 |     |

<210> 353  
<211> 864  
<212> DNA  
<213> Homo sapiens

<220>  
<221> unsure  
<222> 654, 711, 748, 827  
<223> unknown base

<400> 353  
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tagacctcag ctccaacata tgcattctga agaaagatgg ctgagatgac 150  
agaatgcttt attttggaaa gaaacaatgt tctaggtcaa actgagtcta 200  
ccaaatgcag actttcacaa tggttctaga agaaatctgg acaagtcttt 250  
tcatgtgggtt tttctacgca ttgattccat gtttgctcac agatgaagtg 300  
gccattctgc ctgcccctca gaacctctct gtactctcaa ccaacatgaa 350  
gcatctcttg atgtggagcc cagtgatcgc gcctggagaa acagtgtact 400  
attctgtcga ataccagggg gagtacgaga gcctgtacac gagccacatc 450  
tggatcccca gcagctggtg ctactcact gaaggtcctg agtgtgatgt 500  
cactgatgac atcacggcca ctgtgccata caacctttgt gtcagggccca 550  
cattgggctc acagacctca gcctggagca tcctgaagca tccctttaat 600  
agaaactcaa ccaccttac ccgacctggg atggagatca ccaaagatgg 650  
cttncacctg gttattgagc tggaggacct ggggccccag tttgagttcc 700  
ttgtggccta ntggaggagg ggcgaacccc ttgcggcgca aggggttngc 750  
gaacccttg cggccgctgg ggtatctctc gagaaaagag aggcccaata 800  
tgaccacat actcaatatg gacgaantgc tattgtccac ctgtttgagt 850  
ggcgtgggt tgat 864

<210> 354  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 354  
aggttcgct gcgactagac ctc 23

<210> 355  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 355  
ccaggtcggg taaggatggt tgag 24

<210> 356  
<211> 50  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 356  
tttctacgca ttgattccat gtttgctcac agatgaagtg gccattctgc 50

<210> 357  
<211> 1670  
<212> DNA  
<213> Homo sapiens

<400> 357  
cccacgcgtc cgcccacgcg tccgagggac aagagagaag agagactgaa 50  
acagggagaa gaggcaggag aggaggaggt ggggagagca cgaagctgga 100  
ggccgacact gagggagggc gggaggaggt gaagaaggag agaggggaga 150  
agaggcagga gctggaaagg agagagggag gaggaggagg agatgcggga 200  
tgagagacctg gagttaggtg gcttgggaga gcttaatgaa aagagaacgg 250  
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gctgagagga gtaggaagat caggagctag agggagactg gagggttccg 350  
ggaaaagagc agaggaaaga ggaaagacac agagagacgg gagagagaag 400  
aagagtgggt ttgaagggcg gatctcagtc cctggctgct ttggcatttg 450  
gggaactggg actccctgtg gggaggagag gaaagctgga agtcctggag 500  
ggacagggtc ccagaaggag gggacagagg agctgagaga ggggggcagg 550  
gcgttgggca ggggtccctc ggaggcctcc tggggatggg ggctgcagct 600  
cgtctgagcg cccctcgagc gctggtactc tgggctgcac tgggggcagc 650  
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ataatctcca gggaaacttc gtgccagggc ctcccttctg gggcctgggtg 750  
 aatgcagcgt ggagtctgtg tgctgtgggg aagcggcaga gccccgtgga 800  
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 tcagcactgg aggagagaag ctccggggaa ccttgtacaa caccggccga 900  
 catgtctcct tcctgcctgc accccgacct gtgggtcaatg tgtctggagg 950  
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 cgctgcctcc cgcgggccca atggcctggc cattctcagc ctctttgtca 1150  
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 accatcactc gcatctccta caagaatgat gcctactttc ttcaagacct 1250  
 gagcctggag ctctgttcc ctgaatcctt cggttctatc acctatcagg 1300  
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 gagccagaat cctccatctc agatcttcca gagcctcagc ggtaacagcc 1450  
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 cggcaccocg agaggcgctg ccgaggcccc aactacogcc tgcattgtgga 1550  
 tgggtgtcccc catggtcgtg gagactcccc ttcgaggatt gcaccgccc 1600  
 gtcctaagcc tccccacaag gcgaggggag ttaccocctaa aacaaagcta 1650  
 ttaaagggac agaatactta 1670

<210> 358

<211> 328

<212> PRT

<213> Homo sapiens

<400> 358

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Ala | Ala | Ala | Arg | Leu | Ser | Ala | Pro | Arg | Ala | Leu | Val | Leu |
| 1   |     |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Ala | Ala | Leu | Gly | Ala | Ala | Ala | His | Ile | Gly | Pro | Ala | Pro | Asp |
|     |     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Glu | Asp | Trp | Trp | Ser | Tyr | Lys | Asp | Asn | Leu | Gln | Gly | Asn | Phe |
|     |     |     | 35  |     |     |     |     |     | 40  |     |     |     |     | 45  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Pro | Gly | Pro | Pro | Phe | Trp | Gly | Leu | Val | Asn | Ala | Ala | Trp | Ser |
|     |     |     | 50  |     |     |     |     |     | 55  |     |     |     |     | 60  |

|   |     |     |     |
|---|-----|-----|-----|
| Leu Cys Ala Val Gly Lys Arg Gln Ser Pro Val Asp Val Glu Leu | 65  | 70  | 75  |
| Lys Arg Val Leu Tyr Asp Pro Phe Leu Pro Pro Leu Arg Leu Ser | 80  | 85  | 90  |
| Thr Gly Gly Glu Lys Leu Arg Gly Thr Leu Tyr Asn Thr Gly Arg | 95  | 100 | 105 |
| His Val Ser Phe Leu Pro Ala Pro Arg Pro Val Val Asn Val Ser | 110 | 115 | 120 |
| Gly Gly Pro Leu Leu Tyr Ser His Arg Leu Ser Glu Leu Arg Leu | 125 | 130 | 135 |
| Leu Phe Gly Ala Arg Asp Gly Ala Gly Ser Glu His Gln Ile Asn | 140 | 145 | 150 |
| His Gln Gly Phe Ser Ala Glu Val Gln Leu Ile His Phe Asn Gln | 155 | 160 | 165 |
| Glu Leu Tyr Gly Asn Phe Ser Ala Ala Ser Arg Gly Pro Asn Gly | 170 | 175 | 180 |
| Leu Ala Ile Leu Ser Leu Phe Val Asn Val Ala Ser Thr Ser Asn | 185 | 190 | 195 |
| Pro Phe Leu Ser Arg Leu Leu Asn Arg Asp Thr Ile Thr Arg Ile | 200 | 205 | 210 |
| Ser Tyr Lys Asn Asp Ala Tyr Phe Leu Gln Asp Leu Ser Leu Glu | 215 | 220 | 225 |
| Leu Leu Phe Pro Glu Ser Phe Gly Phe Ile Thr Tyr Gln Gly Ser | 230 | 235 | 240 |
| Leu Ser Thr Pro Pro Cys Ser Glu Thr Val Thr Trp Ile Leu Ile | 245 | 250 | 255 |
| Asp Arg Ala Leu Asn Ile Thr Ser Leu Gln Met His Ser Leu Arg | 260 | 265 | 270 |
| Leu Leu Ser Gln Asn Pro Pro Ser Gln Ile Phe Gln Ser Leu Ser | 275 | 280 | 285 |
| Gly Asn Ser Arg Pro Leu Gln Pro Leu Ala His Arg Ala Leu Arg | 290 | 295 | 300 |
| Gly Asn Arg Asp Pro Arg His Pro Glu Arg Arg Cys Arg Gly Pro | 305 | 310 | 315 |
| Asn Tyr Arg Leu His Val Asp Gly Val Pro His Gly Arg         | 320 | 325 |     |

<210> 359

<211> 24

<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 359  
tctgctgagg tgcagctcat tcac 24

<210> 360  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 360  
gaggctctgg aagatctgag atgg 24

<210> 361  
<211> 50  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 361  
gcctctttgt caacgttgcc agtacctcta acccattcct cagtcgcctc 50

<210> 362  
<211> 3038  
<212> DNA  
<213> Homo sapiens

<400> 362  
ggcgctgggt tctgcgcgta ctggctgtac ggagcaggag caagaggctg 50  
ccgccagcct ccgccgccga gcctcgttcg tgtccccgcc cctcgtcct 100  
gcagctactg ctcagaaacg ctggggcgcc caccctggca gactaacgaa 150  
gcagctccct tcccaccca actgcaggtc taattttgga cgctttgcct 200  
gccatttctt ccaggttgag ggagccgcag aggcggaggc tcgcgtattc 250  
ctgcagtcag caccacgtc gccccggac gctcgggtgct caggcccttc 300  
gcgagcgggg ctctccgtct gcggtccttt gtgaaggctc tgggcggctg 350  
cagaggccgg ccgtccggtt tggctcacct ctcccaggaa acttcacact 400  
ggagagccaa aaggagtgga agagcctgtc ttggagattt tcttggggaa 450  
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aaccacagtg ctgttcatgg ctagagcaat tccagccatg gtggttccca 550  
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catgcagagt attttggacc ttcataataa attacgaagt caggtgtatc 700  
caacagcctc taatatggag tatatgacat gggatgtaga gctggaaaga 750  
tctgcagaat cctgggctga aagttgcttg tgggaacatg gacctgcaag 800  
cttgcttcca tcaattggac agaatttggg agcacactgg ggaagatata 850  
ggccccgac gtttcatgta caatcgtggt atgatgaagt gaaagacttt 900  
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gaatcggttg tgccattaat ttgtgtcata acatgaacat ctgggggcag 1050  
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ctggtggggc catgcccctt acaaacatgg gcggccctgt tctgcttgcc 1150  
cacctagttt tggagggggc tgtagagaaa atctgtgcta caaagaagg 1200  
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acagcagtca caagtccatg acacccatgt cgggacaaga tcagatgata 1300  
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gcattatttc atcaagtcca atagaaatgg tattcaaaca attggcaa 1600  
atcagtctgc taattccttc acagtctcta aagtaacagt tcaggctgtg 1650  
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tgcagagcag cagtacatgc tggagtgggt cgaaatcacg gtggttatgt 1850  
tgatgtaatg cctgtggaca aaagaaagac ctacattgct tcttttcaga 1900  
atggaatctt ctcagaaagt ttacagaatc ctccaggagg aaaggcattc 1950



agagtgtttg ctgttgtgtg aaactgaata cttggaagag gaccataaag 2000  
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 taaatcttga taaacaaagt ctataaaata aaacatggga cattagcttt 2150  
 gggaaaagta atgaaaatat aatgggtttta gaaatcctgt gttaaatatt 2200  
 gctatatttt cttagcagtt atttctacag ttaattacat agtcatgatt 2250  
 gttctacggt tcatatatta tatgggtgctt tgtatatgcc actaataaaa 2300  
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 acttaataac tgtaaagttt ttttctgtta atttaggcat atagaatatt 2500  
 aaattctgat attgcacttc ttattttata taaaataatc ctttaatatc 2550  
 caaatgaatc tgtaaaaatg tttgattcct tgggaatggc cttaaaaata 2600  
 aatgtaataa agtcagagtg gtggtatgaa aacattccta gtgatcatgt 2650  
 agtaaagtga gggttaagca tggacagcca gagctttcta tgtactgtta 2700  
 aaattgaggt cacatatfff cttttgtatc ctggcaaata ctctgcagg 2750  
 ccaggaagta taatagcaaa aagttgaaca aagatgaact aatgtattac 2800  
 attaccattg ccactgattt tttttaaatg gtaaatgacc ttgtatataa 2850  
 atattgccat atcatggtac ctataatggt gatatatftg tttctatgaa 2900  
 aaatgtattg tgctttgata ctaaaaatct gtaaaatggt agttttggta 2950  
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 taaacattaa aattaatcat gtttcaaaaa aaaaaaaa 3038

<210> 363  
 <211> 500  
 <212> PRT  
 <213> Homo sapiens

<400> 363  
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 1 5 10 15  
 Phe Met Ala Arg Ala Ile Pro Ala Met Val Val Pro Asn Ala Thr  
 20 25 30

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Leu | Leu | Glu | Lys | Leu | Leu | Glu | Lys | Tyr | Met | Asp | Glu | Asp | Gly | Glu |  | 35  | 40  | 45  |
| Trp | Trp | Ile | Ala | Lys | Gln | Arg | Gly | Lys | Arg | Ala | Ile | Thr | Asp | Asn |  | 50  | 55  | 60  |
| Asp | Met | Gln | Ser | Ile | Leu | Asp | Leu | His | Asn | Lys | Leu | Arg | Ser | Gln |  | 65  | 70  | 75  |
| Val | Tyr | Pro | Thr | Ala | Ser | Asn | Met | Glu | Tyr | Met | Thr | Trp | Asp | Val |  | 80  | 85  | 90  |
| Glu | Leu | Glu | Arg | Ser | Ala | Glu | Ser | Trp | Ala | Glu | Ser | Cys | Leu | Trp |  | 95  | 100 | 105 |
| Glu | His | Gly | Pro | Ala | Ser | Leu | Leu | Pro | Ser | Ile | Gly | Gln | Asn | Leu |  | 110 | 115 | 120 |
| Gly | Ala | His | Trp | Gly | Arg | Tyr | Arg | Pro | Pro | Thr | Phe | His | Val | Gln |  | 125 | 130 | 135 |
| Ser | Trp | Tyr | Asp | Glu | Val | Lys | Asp | Phe | Ser | Tyr | Pro | Tyr | Glu | His |  | 140 | 145 | 150 |
| Glu | Cys | Asn | Pro | Tyr | Cys | Pro | Phe | Arg | Cys | Ser | Gly | Pro | Val | Cys |  | 155 | 160 | 165 |
| Thr | His | Tyr | Thr | Gln | Val | Val | Trp | Ala | Thr | Ser | Asn | Arg | Ile | Gly |  | 170 | 175 | 180 |
| Cys | Ala | Ile | Asn | Leu | Cys | His | Asn | Met | Asn | Ile | Trp | Gly | Gln | Ile |  | 185 | 190 | 195 |
| Trp | Pro | Lys | Ala | Val | Tyr | Leu | Val | Cys | Asn | Tyr | Ser | Pro | Lys | Gly |  | 200 | 205 | 210 |
| Asn | Trp | Trp | Gly | His | Ala | Pro | Tyr | Lys | His | Gly | Arg | Pro | Cys | Ser |  | 215 | 220 | 225 |
| Ala | Cys | Pro | Pro | Ser | Phe | Gly | Gly | Gly | Cys | Arg | Glu | Asn | Leu | Cys |  | 230 | 235 | 240 |
| Tyr | Lys | Glu | Gly | Ser | Asp | Arg | Tyr | Tyr | Pro | Pro | Arg | Glu | Glu | Glu |  | 245 | 250 | 255 |
| Thr | Asn | Glu | Ile | Glu | Arg | Gln | Gln | Ser | Gln | Val | His | Asp | Thr | His |  | 260 | 265 | 270 |
| Val | Arg | Thr | Arg | Ser | Asp | Asp | Ser | Ser | Arg | Asn | Glu | Val | Ile | Ser |  | 275 | 280 | 285 |
| Ala | Gln | Gln | Met | Ser | Gln | Ile | Val | Ser | Cys | Glu | Val | Arg | Leu | Arg |  | 290 | 295 | 300 |
| Asp | Gln | Cys | Lys | Gly | Thr | Thr | Cys | Asn | Arg | Tyr | Glu | Cys | Pro | Ala |  | 305 | 310 | 315 |

|                 |                     |                         |
|-----------------|---------------------|-------------------------|
| Gly Cys Leu Asp | Ser Lys Ala Lys Val | Ile Gly Ser Val His Tyr |
| 320             |                     | 325 330                 |
| Glu Met Gln Ser | Ser Ile Cys Arg Ala | Ala Ile His Tyr Gly Ile |
| 335             |                     | 340 345                 |
| Ile Asp Asn Asp | Gly Gly Trp Val Asp | Ile Thr Arg Gln Gly Arg |
| 350             |                     | 355 360                 |
| Lys His Tyr Phe | Ile Lys Ser Asn Arg | Asn Gly Ile Gln Thr Ile |
| 365             |                     | 370 375                 |
| Gly Lys Tyr Gln | Ser Ala Asn Ser Phe | Thr Val Ser Lys Val Thr |
| 380             |                     | 385 390                 |
| Val Gln Ala Val | Thr Cys Glu Thr Thr | Val Glu Gln Leu Cys Pro |
| 395             |                     | 400 405                 |
| Phe His Lys Pro | Ala Ser His Cys Pro | Arg Val Tyr Cys Pro Arg |
| 410             |                     | 415 420                 |
| Asn Cys Met Gln | Ala Asn Pro His Tyr | Ala Arg Val Ile Gly Thr |
| 425             |                     | 430 435                 |
| Arg Val Tyr Ser | Asp Leu Ser Ser Ile | Cys Arg Ala Ala Val His |
| 440             |                     | 445 450                 |
| Ala Gly Val Val | Arg Asn His Gly Gly | Tyr Val Asp Val Met Pro |
| 455             |                     | 460 465                 |
| Val Asp Lys Arg | Lys Thr Tyr Ile Ala | Ser Phe Gln Asn Gly Ile |
| 470             |                     | 475 480                 |
| Phe Ser Glu Ser | Leu Gln Asn Pro Pro | Gly Gly Lys Ala Phe Arg |
| 485             |                     | 490 495                 |
| Val Phe Ala Val | Val                 |                         |
|                 | 500                 |                         |

<210> 364

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 364

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<210> 365

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 365  
ccaagagtat actgtcctcg 20

<210> 366  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 366  
agcacagatt ttctctacag ccccc 25

<210> 367  
<211> 24  
<212> DNA  
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<220>  
<223> Synthetic oligonucleotide probe

<400> 367  
aaccactcca gcatgtactg ctgc 24

<210> 368  
<211> 50  
<212> DNA  
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<220>  
<223> Synthetic oligonucleotide probe

<400> 368  
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<210> 369  
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<212> DNA  
<213> Homo sapiens

<400> 369  
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agagaaagcc gagcagagct gggtagcgct tccgggccgc cgctccgacg 150  
ggccagcgcc ctcccatgt ccctgtctcc acgccgcgcc cctccggtca 200  
gcatgaggct cctggcggcc gcgctgctcc tgctgctgct ggcgctgtac 250  
accgcgcgtg tggacgggtc caaatgcaag tgctcccga agggacccaa 300  
gatccgctac agcgacgtga agaagctgga aatgaagcca aagtaccgcg 350

actgcgagga gaagatgggtt atcatcacca ccaagagcgt gtccaggtac 400  
 cgagggtcagg agcactgcct gcaccccaag ctgcagagca ccaagcgctt 450  
 catcaagtgg tacaacgcct ggaacgagaa gcgcagggtc tacgaagaat 500  
 aggggtgaaaa acctcagaag ggaaaactcc aaaccagttg ggagacttgt 550  
 gcaaaggact ttgcagatta aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 600  
 aaaaaaaaaa aaagcctttc tttctcacag gcataagaca caaattatat 650  
 attgttatga agcacttttt accaacgggtc agttttttaca ttttatagct 700  
 gcgtgcgaaa ggcttccaga tgggagaccc atctctcttg tgctccagac 750  
 ttcatacacag gctgcttttt atcaaaaagg ggaaaactca tgcctttcct 800  
 ttttaaaaaa tgcttttttg tatttgtcca tacgtcacta tacatctgag 850  
 ctttataagc gcccgaggagg aacaatgagc ttggtggaca catttcattg 900  
 cagtgttgct ccattcctag cttgggaagc ttccgcttag aggtcctggc 950  
 gcctcggcac agctgccacg ggctctcctg ggcttatggc cggtcacagc 1000  
 ctcagtgtga ctccacagtg gcccctgtag ccgggcaagc aggagcaggt 1050  
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 agatcctgtg atggcgagac aaatgatcct taaagaaggt gtgggggtctt 1200  
 tccaacctg aggatttctg aaagggtcac aggttcaata tttaatgctt 1250  
 cagaagcatg tgagggtccc aacactgtca gcaaaaacct taggagaaaa 1300  
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 gaacatgcag tactaaagca atatatttgt gattccccat gtaattcttc 1450  
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 cagtatatgc cgcattgtac tgctgtgtta tatgctatgt acatgtcaga 1600  
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<210> 370

<211> 111

<212> PRT

<213> Homo sapiens

<400> 370

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Leu | Leu | Pro | Arg | Arg | Ala | Pro | Pro | Val | Ser | Met | Arg | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |
| Leu | Ala | Ala | Ala | Leu | Leu | Leu | Leu | Leu | Leu | Ala | Leu | Tyr | Thr | Ala |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |
| Arg | Val | Asp | Gly | Ser | Lys | Cys | Lys | Cys | Ser | Arg | Lys | Gly | Pro | Lys |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |
| Ile | Arg | Tyr | Ser | Asp | Val | Lys | Lys | Leu | Glu | Met | Lys | Pro | Lys | Tyr |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |
| Pro | His | Cys | Glu | Glu | Lys | Met | Val | Ile | Ile | Thr | Thr | Lys | Ser | Val |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |
| Ser | Arg | Tyr | Arg | Gly | Gln | Glu | His | Cys | Leu | His | Pro | Lys | Leu | Gln |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |
| Ser | Thr | Lys | Arg | Phe | Ile | Lys | Trp | Tyr | Asn | Ala | Trp | Asn | Glu | Lys |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |
| Arg | Arg | Val | Tyr | Glu | Glu |     |     |     |     |     |     |     |     |     |
|     |     |     |     | 110 |     |     |     |     |     |     |     |     |     |     |

<210> 371

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 371

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<210> 372

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 372

tcccaactgg tttggagttt tccc 24

<210> 373

<211> 45

<212> DNA

<213> Artificial Sequence

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<400> 373

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<210> 374

<211> 3113

<212> DNA

<213> Homo sapiens

<400> 374

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accctcattg acagccaagc acagtatcca gttgtcaaca caaattatgg 150  
caaaatccgg ggcctaagaa caccgttacc caatgagatc ttgggtccag 200  
tggagcagta cttaggggtc ccctatgcct cccccccac tggagagagg 250  
cggtttcagc cccagaacc cccgtcctcc tggactggca tccgaaatac 300  
tactcagttt gctgctgtgt gccccagca cctggatgag agatccttac 350  
tgcatgacat gctgcccac tggtttaccg ccaatttga tactttgatg 400  
acctatgttc aagatcaaaa tgaagactgc ctttacttaa acatctacgt 450  
gcccacggaa gatggagcca acacaaagaa aaacgcagat gatataacga 500  
gtaatgaccg tgggtgaagac gaagatatc atgatcagaa cagtaagaag 550  
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catgattgac ggcagcattt tggcaagcta cggaaacgtc atcgtgatca 650  
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aacgaaagtg gctttctggt tggaactcgt tcctcatttg cacaacttga 1850  
acgagatatt ccagtatgtt tcaacaacca caaagggttc tccaccagac 1900  
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acaagaggcg ccatgagact cacaggcgcc ccagtcccca gagaaacacc 2200  
acaaatgata tcgctcacat ccagaacgaa gagatcatgt ctctgcagat 2250  
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gacaaaacag tacaaattta cccacggac attccaccac tagagtatag 2500  
ctttgcccta tttcccttcc tatccctctg ccctaccgc tcagcaacat 2550  
agaagaggga aggaaagaga gaaggaaaga gagagagaaa gaaagtctcc 2600  
agaccaggaa tgtttttgtc ccaactgactt aagacaaaaa tgcaaaaagg 2650



cagtcacccc atcccggcag acccttatcg ttggtgtttt ccagtattac 2700  
 aagatcaact tctgaccctg tgaaatgtga gaagtacaca tttctgttaa 2750  
 aataactgct ttaagatctc taccactcca atcaatgttt agtgtgatag 2800  
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 gaagtttaaa catttctttc tgtgccacac aatggatggc tctccttaag 2950  
 tgaagaaaga gtcaatgaga ttttgcccag cacatggagc tgtaatccag 3000  
 agagaaggaa acgtagaaat ttattattaa aagaatggac tgtgcagcga 3050  
 aatctgtacg gttctgtgca aagaggtggt ttgccagcct gaactatatt 3100  
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<210> 375

<211> 816

<212> PRT

<213> Homo sapiens

<400> 375

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Asn | Ser | Asn | Val | Leu | Leu | Trp | Leu | Thr | Ala | Leu | Ala | Ile |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |
| Lys | Phe | Thr | Leu | Ile | Asp | Ser | Gln | Ala | Gln | Tyr | Pro | Val | Val | Asn |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |
| Thr | Asn | Tyr | Gly | Lys | Ile | Arg | Gly | Leu | Arg | Thr | Pro | Leu | Pro | Asn |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |
| Glu | Ile | Leu | Gly | Pro | Val | Glu | Gln | Tyr | Leu | Gly | Val | Pro | Tyr | Ala |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |
| Ser | Pro | Pro | Thr | Gly | Glu | Arg | Arg | Phe | Gln | Pro | Pro | Glu | Pro | Pro |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |
| Ser | Ser | Trp | Thr | Gly | Ile | Arg | Asn | Thr | Thr | Gln | Phe | Ala | Ala | Val |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |
| Cys | Pro | Gln | His | Leu | Asp | Glu | Arg | Ser | Leu | Leu | His | Asp | Met | Leu |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |
| Pro | Ile | Trp | Phe | Thr | Ala | Asn | Leu | Asp | Thr | Leu | Met | Thr | Tyr | Val |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |
| Gln | Asp | Gln | Asn | Glu | Asp | Cys | Leu | Tyr | Leu | Asn | Ile | Tyr | Val | Pro |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |
| Thr | Glu | Asp | Gly | Ala | Asn | Thr | Lys | Lys | Asn | Ala | Asp | Asp | Ile | Thr |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ser | Asn | Asp | Arg | Gly | Glu | Asp | Glu | Asp | Ile | His | Asp | Gln | Asn | Ser |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |
| Lys | Lys | Pro | Val | Met | Val | Tyr | Ile | His | Gly | Gly | Ser | Tyr | Met | Glu |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |
| Gly | Thr | Gly | Asn | Met | Ile | Asp | Gly | Ser | Ile | Leu | Ala | Ser | Tyr | Gly |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |
| Asn | Val | Ile | Val | Ile | Thr | Ile | Asn | Tyr | Arg | Leu | Gly | Ile | Leu | Gly |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| Phe | Leu | Ser | Thr | Gly | Asp | Gln | Ala | Ala | Lys | Gly | Asn | Tyr | Gly | Leu |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| Leu | Asp | Gln | Ile | Gln | Ala | Leu | Arg | Trp | Ile | Glu | Glu | Asn | Val | Gly |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Ala | Phe | Gly | Gly | Asp | Pro | Lys | Arg | Val | Thr | Ile | Phe | Gly | Ser | Gly |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |
| Ala | Gly | Ala | Ser | Cys | Val | Ser | Leu | Leu | Thr | Leu | Ser | His | Tyr | Ser |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |
| Glu | Gly | Leu | Phe | Gln | Lys | Ala | Ile | Ile | Gln | Ser | Gly | Thr | Ala | Leu |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |
| Ser | Ser | Trp | Ala | Val | Asn | Tyr | Gln | Pro | Ala | Lys | Tyr | Thr | Arg | Ile |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |
| Leu | Ala | Asp | Lys | Val | Gly | Cys | Asn | Met | Leu | Asp | Thr | Thr | Asp | Met |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |  |
| Val | Glu | Cys | Leu | Arg | Asn | Lys | Asn | Tyr | Lys | Glu | Leu | Ile | Gln | Gln |  |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |  |
| Thr | Ile | Thr | Pro | Ala | Thr | Tyr | His | Ile | Ala | Phe | Gly | Pro | Val | Ile |  |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |  |
| Asp | Gly | Asp | Val | Ile | Pro | Asp | Asp | Pro | Gln | Ile | Leu | Met | Glu | Gln |  |
|     |     |     |     | 350 |     |     |     |     | 355 |     |     |     |     | 360 |  |
| Gly | Glu | Phe | Leu | Asn | Tyr | Asp | Ile | Met | Leu | Gly | Val | Asn | Gln | Gly |  |
|     |     |     |     | 365 |     |     |     |     | 370 |     |     |     |     | 375 |  |
| Glu | Gly | Leu | Lys | Phe | Val | Asp | Gly | Ile | Val | Asp | Asn | Glu | Asp | Gly |  |
|     |     |     |     | 380 |     |     |     |     | 385 |     |     |     |     | 390 |  |
| Val | Thr | Pro | Asn | Asp | Phe | Asp | Phe | Ser | Val | Ser | Asn | Phe | Val | Asp |  |
|     |     |     |     | 395 |     |     |     |     | 400 |     |     |     |     | 405 |  |
| Asn | Leu | Tyr | Gly | Tyr | Pro | Glu | Gly | Lys | Asp | Thr | Leu | Arg | Glu | Thr |  |
|     |     |     |     | 410 |     |     |     |     | 415 |     |     |     |     | 420 |  |
| Ile | Lys | Phe | Met | Tyr | Thr | Asp | Trp | Ala | Asp | Lys | Glu | Asn | Pro | Glu |  |
|     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |     | 435 |  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|
| Thr | Arg | Arg | Lys | Thr | Leu | Val | Ala | Leu | Phe | Thr | Asp | His | Gln | Trp |  |  |  |
|     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     | 450 |  |  |  |
| Val | Ala | Pro | Ala | Val | Ala | Ala | Asp | Leu | His | Ala | Gln | Tyr | Gly | Ser |  |  |  |
|     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     | 465 |  |  |  |
| Pro | Thr | Tyr | Phe | Tyr | Ala | Phe | Tyr | His | His | Cys | Gln | Ser | Glu | Met |  |  |  |
|     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |  |  |  |
| Lys | Pro | Ser | Trp | Ala | Asp | Ser | Ala | His | Gly | Asp | Glu | Val | Pro | Tyr |  |  |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |  |  |  |
| Val | Phe | Gly | Ile | Pro | Met | Ile | Gly | Pro | Thr | Glu | Leu | Phe | Ser | Cys |  |  |  |
|     |     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |  |  |  |
| Asn | Phe | Ser | Lys | Asn | Asp | Val | Met | Leu | Ser | Ala | Val | Val | Met | Thr |  |  |  |
|     |     |     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |  |  |  |
| Tyr | Trp | Thr | Asn | Phe | Ala | Lys | Thr | Gly | Asp | Pro | Asn | Gln | Pro | Val |  |  |  |
|     |     |     |     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |  |  |  |
| Pro | Gln | Asp | Thr | Lys | Phe | Ile | His | Thr | Lys | Pro | Asn | Arg | Phe | Glu |  |  |  |
|     |     |     |     | 545 |     |     |     |     | 550 |     |     |     |     | 555 |  |  |  |
| Glu | Val | Ala | Trp | Ser | Lys | Tyr | Asn | Pro | Lys | Asp | Gln | Leu | Tyr | Leu |  |  |  |
|     |     |     |     | 560 |     |     |     |     | 565 |     |     |     |     | 570 |  |  |  |
| His | Ile | Gly | Leu | Lys | Pro | Arg | Val | Arg | Asp | His | Tyr | Arg | Ala | Thr |  |  |  |
|     |     |     |     | 575 |     |     |     |     | 580 |     |     |     |     | 585 |  |  |  |
| Lys | Val | Ala | Phe | Trp | Leu | Glu | Leu | Val | Pro | His | Leu | His | Asn | Leu |  |  |  |
|     |     |     |     | 590 |     |     |     |     | 595 |     |     |     |     | 600 |  |  |  |
| Asn | Glu | Ile | Phe | Gln | Tyr | Val | Ser | Thr | Thr | Thr | Lys | Val | Pro | Pro |  |  |  |
|     |     |     |     | 605 |     |     |     |     | 610 |     |     |     |     | 615 |  |  |  |
| Pro | Asp | Met | Thr | Ser | Phe | Pro | Tyr | Gly | Thr | Arg | Arg | Ser | Pro | Ala |  |  |  |
|     |     |     |     | 620 |     |     |     |     | 625 |     |     |     |     | 630 |  |  |  |
| Lys | Ile | Trp | Pro | Thr | Thr | Lys | Arg | Pro | Ala | Ile | Thr | Pro | Ala | Asn |  |  |  |
|     |     |     |     | 635 |     |     |     |     | 640 |     |     |     |     | 645 |  |  |  |
| Asn | Pro | Lys | His | Ser | Lys | Asp | Pro | His | Lys | Thr | Gly | Pro | Glu | Asp |  |  |  |
|     |     |     |     | 650 |     |     |     |     | 655 |     |     |     |     | 660 |  |  |  |
| Thr | Thr | Val | Leu | Ile | Glu | Thr | Lys | Arg | Asp | Tyr | Ser | Thr | Glu | Leu |  |  |  |
|     |     |     |     | 665 |     |     |     |     | 670 |     |     |     |     | 675 |  |  |  |
| Ser | Val | Thr | Ile | Ala | Val | Gly | Ala | Ser | Leu | Leu | Phe | Leu | Asn | Ile |  |  |  |
|     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |     | 690 |  |  |  |
| Leu | Ala | Phe | Ala | Ala | Leu | Tyr | Tyr | Lys | Lys | Asp | Lys | Arg | Arg | His |  |  |  |
|     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     | 705 |  |  |  |
| Glu | Thr | His | Arg | Arg | Pro | Ser | Pro | Gln | Arg | Asn | Thr | Thr | Asn | Asp |  |  |  |
|     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |  |  |  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Ala | His | Ile | Gln | Asn | Glu | Glu | Ile | Met | Ser | Leu | Gln | Met | Lys |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |
| Gln | Leu | Glu | His | Asp | His | Glu | Cys | Glu | Ser | Leu | Gln | Ala | His | Asp |
|     |     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |
| Thr | Leu | Arg | Leu | Thr | Cys | Pro | Pro | Asp | Tyr | Thr | Leu | Thr | Leu | Arg |
|     |     |     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |
| Arg | Ser | Pro | Asp | Asp | Ile | Pro | Leu | Met | Thr | Pro | Asn | Thr | Ile | Thr |
|     |     |     |     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |
| Met | Ile | Pro | Asn | Thr | Leu | Thr | Gly | Met | Gln | Pro | Leu | His | Thr | Phe |
|     |     |     |     | 785 |     |     |     |     | 790 |     |     |     |     | 795 |
| Asn | Thr | Phe | Ser | Gly | Gly | Gln | Asn | Ser | Thr | Asn | Leu | Pro | His | Gly |
|     |     |     |     | 800 |     |     |     |     | 805 |     |     |     |     | 810 |
| His | Ser | Thr | Thr | Arg | Val |     |     |     |     |     |     |     |     |     |
|     |     |     |     | 815 |     |     |     |     |     |     |     |     |     |     |

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<220>  
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<220>  
 <223> Synthetic oligonucleotide probe

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<210> 378  
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 <212> DNA  
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<210> 379  
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 <212> DNA

<213> Homo sapiens

<400> 379

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ttgttggggg ctgggcaggg gccacagcaa gtcggggcgg gtcaaacgtt 150  
cgagtacttg aaacgggagc actcgtctgc gaagccctac caggggtgtg 200  
gcacaggcag ttcctcactg tggaaatctga tgggcaatgc catggtgatg 250  
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 <212> PRT  
 <213> Homo sapiens

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 Arg Cys Leu Ser Ala Arg Asp Gly Ser Arg Met Leu Leu Leu Leu  
 20 25 30

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Leu | Leu | Leu | Gly | Ser | Gly | Gln | Gly | Pro | Gln | Gln | Val | Gly | Ala | Gly |  | 35  | 40  | 45  |
| Gln | Thr | Phe | Glu | Tyr | Leu | Lys | Arg | Glu | His | Ser | Leu | Ser | Lys | Pro |  | 50  | 55  | 60  |
| Tyr | Gln | Gly | Val | Gly | Thr | Gly | Ser | Ser | Ser | Leu | Trp | Asn | Leu | Met |  | 65  | 70  | 75  |
| Gly | Asn | Ala | Met | Val | Met | Thr | Gln | Tyr | Ile | Arg | Leu | Thr | Pro | Asp |  | 80  | 85  | 90  |
| Met | Gln | Ser | Lys | Gln | Gly | Ala | Leu | Trp | Asn | Arg | Val | Pro | Cys | Phe |  | 95  | 100 | 105 |
| Leu | Arg | Asp | Trp | Glu | Leu | Gln | Val | His | Phe | Lys | Ile | His | Gly | Gln |  | 110 | 115 | 120 |
| Gly | Lys | Lys | Asn | Leu | His | Gly | Asp | Gly | Leu | Ala | Ile | Trp | Tyr | Thr |  | 125 | 130 | 135 |
| Lys | Asp | Arg | Met | Gln | Pro | Gly | Pro | Val | Phe | Gly | Asn | Met | Asp | Lys |  | 140 | 145 | 150 |
| Phe | Val | Gly | Leu | Gly | Val | Phe | Val | Asp | Thr | Tyr | Pro | Asn | Glu | Glu |  | 155 | 160 | 165 |
| Lys | Gln | Gln | Glu | Arg | Val | Phe | Pro | Tyr | Ile | Ser | Ala | Met | Val | Asn |  | 170 | 175 | 180 |
| Asn | Gly | Ser | Leu | Ser | Tyr | Asp | His | Glu | Arg | Asp | Gly | Arg | Pro | Thr |  | 185 | 190 | 195 |
| Glu | Leu | Gly | Gly | Cys | Thr | Ala | Ile | Val | Arg | Asn | Leu | His | Tyr | Asp |  | 200 | 205 | 210 |
| Thr | Phe | Leu | Val | Ile | Arg | Tyr | Val | Lys | Arg | His | Leu | Thr | Ile | Met |  | 215 | 220 | 225 |
| Met | Asp | Ile | Asp | Gly | Lys | His | Glu | Trp | Arg | Asp | Cys | Ile | Glu | Val |  | 230 | 235 | 240 |
| Pro | Gly | Val | Arg | Leu | Pro | Arg | Gly | Tyr | Tyr | Phe | Gly | Thr | Ser | Ser |  | 245 | 250 | 255 |
| Ile | Thr | Gly | Asp | Leu | Ser | Asp | Asn | His | Asp | Val | Ile | Ser | Leu | Lys |  | 260 | 265 | 270 |
| Leu | Phe | Glu | Leu | Thr | Val | Glu | Arg | Thr | Pro | Glu | Glu | Glu | Lys | Leu |  | 275 | 280 | 285 |
| His | Arg | Asp | Val | Phe | Leu | Pro | Ser | Val | Asp | Asn | Met | Lys | Leu | Pro |  | 290 | 295 | 300 |
| Glu | Met | Thr | Ala | Pro | Leu | Pro | Pro | Leu | Ser | Gly | Leu | Ala | Leu | Phe |  | 305 | 310 | 315 |

Leu Ile Val Phe Phe Ser Leu Val Phe Ser Val Phe Ala Ile Val  
320 325 330

Ile Gly Ile Ile Leu Tyr Asn Lys Trp Gln Glu Gln Ser Arg Lys  
335 340 345

Arg Phe Tyr

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<211> 22

<212> DNA

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<212> DNA

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<223> Synthetic oligonucleotide probe

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<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

<400> 383

gtcaaagctt cgagtacttg aaacgggagc actcgctgtc gaagc 45

<210> 384

<211> 3150

<212> DNA

<213> Homo sapiens

<400> 384

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ggggactcca agatttccat gaagaaaatc agttgtcttc attcaagaat 150

tgggggtctgg ctcaagaattc ctgcagctgg tgaaaatctg ttttctagaa 200



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tgatttctga actaatggtg ctaattcaga gaaatggaaa gtgaaagtga 3050

gattctctgt tgtcatcggc attccaactt tttctctttg tttttgtcca 3100

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<210> 385

<211> 480

<212> PRT

<213> Homo sapiens

<400> 385

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Phe | Arg | Asn | Arg | Phe | Leu | Leu | Leu | Leu | Ala | Leu | Ala | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Ala | Phe | Val | Ser | Leu | Ser | Leu | Gln | Phe | Phe | His | Leu | Ile |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     | 30  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Val | Ser | Thr | Pro | Lys | Asn | Gly | Met | Ser | Ser | Lys | Ser | Arg | Lys |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ile | Met | Pro | Asp | Pro | Val | Thr | Glu | Pro | Pro | Val | Thr | Asp | Pro |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Tyr | Glu | Ala | Leu | Leu | Tyr | Cys | Asn | Ile | Pro | Ser | Val | Ala | Glu |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ser | Met | Glu | Gly | His | Ala | Pro | His | His | Phe | Lys | Leu | Val | Ser |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | His | Val | Phe | Ile | Arg | His | Gly | Asp | Arg | Tyr | Pro | Leu | Tyr | Val |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Pro | Lys | Thr | Lys | Arg | Pro | Glu | Ile | Asp | Cys | Thr | Leu | Val | Ala |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Arg | Lys | Pro | Tyr | His | Pro | Lys | Leu | Glu | Ala | Phe | Ile | Ser | His |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Lys | Gly | Ser | Gly | Ala | Ser | Phe | Glu | Ser | Pro | Leu | Asn | Ser |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Pro | Leu | Tyr | Pro | Asn | His | Pro | Leu | Cys | Glu | Met | Gly | Glu | Leu |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Gln | Thr | Gly | Val | Val | Gln | His | Leu | Gln | Asn | Gly | Gln | Leu | Leu |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Asp | Ile | Tyr | Leu | Lys | Lys | His | Lys | Leu | Leu | Pro | Asn | Asp | Trp |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Ala | Asp | Gln | Leu | Tyr | Leu | Glu | Thr | Thr | Gly | Lys | Ser | Arg | Thr |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Gln | Ser | Gly | Leu | Ala | Leu | Leu | Tyr | Gly | Phe | Leu | Pro | Asp | Phe |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Trp | Lys | Lys | Ile | Tyr | Phe | Arg | His | Gln | Pro | Ser | Ala | Leu | Phe |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |

|   |     |     |     |
|---|-----|-----|-----|
| Cys Ser Gly Ser Cys Tyr Cys Pro Val Arg Asn Gln Tyr Leu Glu | 245 | 250 | 255 |
| Lys Glu Gln Arg Arg Gln Tyr Leu Leu Arg Leu Lys Asn Ser Gln | 260 | 265 | 270 |
| Leu Glu Lys Thr Tyr Gly Glu Met Ala Lys Ile Val Asp Val Pro | 275 | 280 | 285 |
| Thr Lys Gln Leu Arg Ala Ala Asn Pro Ile Asp Ser Met Leu Cys | 290 | 295 | 300 |
| His Phe Cys His Asn Val Ser Phe Pro Cys Thr Arg Asn Gly Cys | 305 | 310 | 315 |
| Val Asp Met Glu His Phe Lys Val Ile Lys Thr His Gln Ile Glu | 320 | 325 | 330 |
| Asp Glu Arg Glu Arg Arg Glu Lys Lys Leu Tyr Phe Gly Tyr Ser | 335 | 340 | 345 |
| Leu Leu Gly Ala His Pro Ile Leu Asn Gln Thr Ile Gly Arg Met | 350 | 355 | 360 |
| Gln Arg Ala Thr Glu Gly Arg Lys Glu Glu Leu Phe Ala Leu Tyr | 365 | 370 | 375 |
| Ser Ala His Asp Val Thr Leu Ser Pro Val Leu Ser Ala Leu Gly | 380 | 385 | 390 |
| Leu Ser Glu Ala Arg Phe Pro Arg Phe Ala Ala Arg Leu Ile Phe | 395 | 400 | 405 |
| Glu Leu Trp Gln Asp Arg Glu Lys Pro Ser Glu His Ser Val Arg | 410 | 415 | 420 |
| Ile Leu Tyr Asn Gly Val Asp Val Thr Phe His Thr Ser Phe Cys | 425 | 430 | 435 |
| Gln Asp His His Lys Arg Ser Pro Lys Pro Met Cys Pro Leu Glu | 440 | 445 | 450 |
| Asn Leu Val Arg Phe Val Lys Arg Asp Met Phe Val Ala Leu Gly | 455 | 460 | 465 |
| Gly Ser Gly Thr Asn Tyr Tyr Asp Ala Cys His Arg Glu Gly Phe | 470 | 475 | 480 |
| <210> 386   |     |     |     |
| <211> 24  |     |     |     |
| <212> DNA   |     |     |     |
| <213> Artificial Sequence                                   |     |     |     |
| <220>   |     |     |     |
| <223> Synthetic oligonucleotide probe                       |     |     |     |

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<210> 387  
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<400> 387  
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<210> 388  
<211> 50  
<212> DNA  
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<223> Synthetic oligonucleotide probe

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gccgctgttc accaatcggg gagagaaaag cggagatcct gctcgccttg 200  
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 acttgggagg ctgagtcagg agaattgctt taacctggga ggtggaggtt 3250  
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<210> 390

<211> 916

<212> PRT

<213> Homo sapiens

<400> 390

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ile | Pro | Ala | Arg | Leu | His | Arg | Asp | Tyr | Lys | Gly | Leu | Val | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |
| Leu | Gly | Ile | Leu | Leu | Gly | Thr | Leu | Trp | Glu | Thr | Gly | Cys | Thr | Gln |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |
| Ile | Arg | Tyr | Ser | Val | Pro | Glu | Glu | Leu | Glu | Lys | Gly | Ser | Arg | Val |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |
| Gly | Asp | Ile | Ser | Arg | Asp | Leu | Gly | Leu | Glu | Pro | Arg | Glu | Leu | Ala |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |
| Glu | Arg | Gly | Val | Arg | Ile | Ile | Pro | Arg | Gly | Arg | Thr | Gln | Leu | Phe |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |
| Ala | Leu | Asn | Pro | Arg | Ser | Gly | Ser | Leu | Val | Thr | Ala | Gly | Arg | Ile |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |
| Asp | Arg | Glu | Glu | Leu | Cys | Met | Gly | Ala | Ile | Lys | Cys | Gln | Leu | Asn |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |
| Leu | Asp | Ile | Leu | Met | Glu | Asp | Lys | Val | Lys | Ile | Tyr | Gly | Val | Glu |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |
| Val | Glu | Val | Arg | Asp | Ile | Asn | Asp | Asn | Ala | Pro | Tyr | Phe | Arg | Glu |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |
| Ser | Glu | Leu | Glu | Ile | Lys | Ile | Ser | Glu | Asn | Ala | Ala | Thr | Glu | Met |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |
| Arg | Phe | Pro | Leu | Pro | His | Ala | Trp | Asp | Pro | Asp | Ile | Gly | Lys | Asn |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |
| Ser | Leu | Gln | Ser | Tyr | Glu | Leu | Ser | Pro | Asn | Thr | His | Phe | Ser | Leu |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |
| Ile | Val | Gln | Asn | Gly | Ala | Asp | Gly | Ser | Lys | Tyr | Pro | Glu | Leu | Val |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |
| Leu | Lys | Arg | Ala | Leu | Asp | Arg | Glu | Glu | Lys | Ala | Ala | His | His | Leu |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |
| Val | Leu | Thr | Ala | Ser | Asp | Gly | Gly | Asp | Pro | Val | Arg | Thr | Gly | Thr |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |
| Ala | Arg | Ile | Arg | Val | Met | Val | Leu | Asp | Ala | Asn | Asp | Asn | Ala | Pro |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Ala | Phe | Ala | Gln | Pro | Glu | Tyr | Arg | Ala | Ser | Val | Pro | Glu | Asn | Leu |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |
| Ala | Leu | Gly | Thr | Gln | Leu | Leu | Val | Val | Asn | Ala | Thr | Asp | Pro | Asp |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |
| Glu | Gly | Val | Asn | Ala | Glu | Val | Arg | Tyr | Ser | Phe | Arg | Tyr | Val | Asp |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |



|   |     |     |     |
|---|-----|-----|-----|
| Asp Lys Ala Ala Gln Val Phe Lys Leu Asp Cys Asn Ser Gly Thr | 290 | 295 | 300 |
| Ile Ser Thr Ile Gly Glu Leu Asp His Glu Glu Ser Gly Phe Tyr | 305 | 310 | 315 |
| Gln Met Glu Val Gln Ala Met Asp Asn Ala Gly Tyr Ser Ala Arg | 320 | 325 | 330 |
| Ala Lys Val Leu Ile Thr Val Leu Asp Val Asn Asp Asn Ala Pro | 335 | 340 | 345 |
| Glu Val Val Leu Thr Ser Leu Ala Ser Ser Val Pro Glu Asn Ser | 350 | 355 | 360 |
| Pro Arg Gly Thr Leu Ile Ala Leu Leu Asn Val Asn Asp Gln Asp | 365 | 370 | 375 |
| Ser Glu Glu Asn Gly Gln Val Ile Cys Phe Ile Gln Gly Asn Leu | 380 | 385 | 390 |
| Pro Phe Lys Leu Glu Lys Ser Tyr Gly Asn Tyr Tyr Ser Leu Val | 395 | 400 | 405 |
| Thr Asp Ile Val Leu Asp Arg Glu Gln Val Pro Ser Tyr Asn Ile | 410 | 415 | 420 |
| Thr Val Thr Ala Thr Asp Arg Gly Thr Pro Pro Leu Ser Thr Glu | 425 | 430 | 435 |
| Thr His Ile Ser Leu Asn Val Ala Asp Thr Asn Asp Asn Pro Pro | 440 | 445 | 450 |
| Val Phe Pro Gln Ala Ser Tyr Ser Ala Tyr Ile Pro Glu Asn Asn | 455 | 460 | 465 |
| Pro Arg Gly Val Ser Leu Val Ser Val Thr Ala His Asp Pro Asp | 470 | 475 | 480 |
| Cys Glu Glu Asn Ala Gln Ile Thr Tyr Ser Leu Ala Glu Asn Thr | 485 | 490 | 495 |
| Ile Gln Gly Ala Ser Leu Ser Ser Tyr Val Ser Ile Asn Ser Asp | 500 | 505 | 510 |
| Thr Gly Val Leu Tyr Ala Leu Ser Ser Phe Asp Tyr Glu Gln Phe | 515 | 520 | 525 |
| Arg Asp Leu Gln Val Lys Val Met Ala Arg Asp Asn Gly His Pro | 530 | 535 | 540 |
| Pro Leu Ser Ser Asn Val Ser Leu Ser Leu Phe Val Leu Asp Gln | 545 | 550 | 555 |
| Asn Asp Asn Ala Pro Glu Ile Leu Tyr Pro Ala Leu Pro Thr Asp | 560 | 565 | 570 |

|   |     |     |     |
|---|-----|-----|-----|
| Gly Ser Thr Gly Val Glu Leu Ala Pro Arg Ser Ala Glu Pro Gly | 575 | 580 | 585 |
| Tyr Leu Val Thr Lys Val Val Ala Val Asp Arg Asp Ser Gly Gln | 590 | 595 | 600 |
| Asn Ala Trp Leu Ser Tyr Arg Leu Leu Lys Ala Ser Glu Pro Gly | 605 | 610 | 615 |
| Leu Phe Ser Val Gly Leu His Thr Gly Glu Val Arg Thr Ala Arg | 620 | 625 | 630 |
| Ala Leu Leu Asp Arg Asp Ala Leu Lys Gln Ser Leu Val Val Ala | 635 | 640 | 645 |
| Val Gln Asp His Gly Gln Pro Pro Leu Ser Ala Thr Val Thr Leu | 650 | 655 | 660 |
| Thr Val Ala Val Ala Asp Ser Ile Pro Gln Val Leu Ala Asp Leu | 665 | 670 | 675 |
| Gly Ser Leu Glu Ser Pro Ala Asn Ser Glu Thr Ser Asp Leu Thr | 680 | 685 | 690 |
| Leu Tyr Leu Val Val Ala Val Ala Ala Val Ser Cys Val Phe Leu | 695 | 700 | 705 |
| Ala Phe Val Ile Leu Leu Leu Ala Leu Arg Leu Arg Arg Trp His | 710 | 715 | 720 |
| Lys Ser Arg Leu Leu Gln Ala Ser Gly Gly Gly Leu Thr Gly Ala | 725 | 730 | 735 |
| Pro Ala Ser His Phe Val Gly Val Asp Gly Val Gln Ala Phe Leu | 740 | 745 | 750 |
| Gln Thr Tyr Ser His Glu Val Ser Leu Thr Thr Asp Ser Arg Lys | 755 | 760 | 765 |
| Ser His Leu Ile Phe Pro Gln Pro Asn Tyr Ala Asp Met Leu Val | 770 | 775 | 780 |
| Ser Gln Glu Ser Phe Glu Lys Ser Glu Pro Leu Leu Leu Ser Gly | 785 | 790 | 795 |
| Asp Ser Val Phe Ser Lys Asp Ser His Gly Leu Ile Glu Val Ser | 800 | 805 | 810 |
| Leu Tyr Gln Ile Phe Phe Leu Phe Phe Phe Asn Cys Ser Val Ser | 815 | 820 | 825 |
| Gln Ala Gly Val Gln Arg Tyr Asp His Ser Ser Leu Arg Pro Gln | 830 | 835 | 840 |
| Thr Pro Arg Leu Lys Gln Leu Ser His Leu Cys Leu Arg Cys Asn | 845 | 850 | 855 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Asp | Tyr | Arg | Cys | Lys | Pro | Pro | Thr | Val | Cys | Leu | Ser | Ile | Tyr |
|     |     |     |     | 860 |     |     |     |     | 865 |     |     |     |     | 870 |
| Leu | Ser | Ile | Tyr | Leu | Ser | Ile | Tyr | Leu | Ser | Ile | Tyr | Leu | Leu | Leu |
|     |     |     |     | 875 |     |     |     |     | 880 |     |     |     |     | 885 |
| Ser | Cys | Thr | Asp | Gly | Ser | Leu | Thr | Pro | Val | Ile | Pro | Val | Leu | Trp |
|     |     |     |     | 890 |     |     |     |     | 895 |     |     |     |     | 900 |
| Glu | Ala | Glu | Ala | Gly | Gly | Ser | Pro | Glu | Val | Gly | Ser | Leu | Arg | Pro |
|     |     |     |     | 905 |     |     |     |     | 910 |     |     |     |     | 915 |

Ala

<210> 391  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 391  
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<210> 392  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 392  
 ctcgggcgca ttgtcgttct ggtc 24

<210> 393  
 <211> 40  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 393  
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<210> 394  
 <211> 999  
 <212> DNA  
 <213> Homo sapiens

<400> 394  
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 cccagttaaa aggctccaga atcgtgtacc aggagagaa ctgaagtact 100

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 ctggaagacc tcaccatggg acgccccga cctcgtgcgg ccaagacgtg 200  
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 caagaaatac ctgtggttca gtccatccca caccctgct acaacagcag 500  
 cgatgtggag gaccacaacc atgatctgat gcttcttcaa ctgcgtgacc 550  
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 atggtctgtg caggcagcag caaaggggct gacacgtgcc agggcgattc 800  
 tggaggcccc ctggtgtgtg atggtgcact ccagggcata acatcctggg 850  
 gctcagaccc ctgtgggagg tccgacaaac ctggcgtcta taccaacatc 900  
 tgccgctacc tggactggat caagaagatc ataggcagca agggctgatt 950  
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<210> 395

<211> 260

<212> PRT

<213> Homo sapiens

<400> 395

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Arg | Pro | Arg | Pro | Arg | Ala | Ala | Lys | Thr | Trp | Met | Phe | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Leu | Gly | Gly | Ala | Trp | Ala | Gly | His | Ser | Arg | Ala | Gln | Glu |
|     |     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Val | Leu | Gly | Gly | His | Glu | Cys | Gln | Pro | His | Ser | Gln | Pro |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Gln | Ala | Ala | Leu | Phe | Gln | Gly | Gln | Gln | Leu | Leu | Cys | Gly | Gly |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Leu | Val | Gly | Gly | Asn | Trp | Val | Leu | Thr | Ala | Ala | His | Cys | Lys |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Lys | Pro | Lys | Tyr | Thr | Val | Arg | Leu | Gly | Asp | His | Ser | Leu | Gln | Asn |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |  |
| Lys | Asp | Gly | Pro | Glu | Gln | Glu | Ile | Pro | Val | Val | Gln | Ser | Ile | Pro |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |  |
| His | Pro | Cys | Tyr | Asn | Ser | Ser | Asp | Val | Glu | Asp | His | Asn | His | Asp |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |  |
| Leu | Met | Leu | Leu | Gln | Leu | Arg | Asp | Gln | Ala | Ser | Leu | Gly | Ser | Lys |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |
| Val | Lys | Pro | Ile | Ser | Leu | Ala | Asp | His | Cys | Thr | Gln | Pro | Gly | Gln |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |
| Lys | Cys | Thr | Val | Ser | Gly | Trp | Gly | Thr | Val | Thr | Ser | Pro | Arg | Glu |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |
| Asn | Phe | Pro | Asp | Thr | Leu | Asn | Cys | Ala | Glu | Val | Lys | Ile | Phe | Pro |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |
| Gln | Lys | Lys | Cys | Glu | Asp | Ala | Tyr | Pro | Gly | Gln | Ile | Thr | Asp | Gly |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |
| Met | Val | Cys | Ala | Gly | Ser | Ser | Lys | Gly | Ala | Asp | Thr | Cys | Gln | Gly |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| Asp | Ser | Gly | Gly | Pro | Leu | Val | Cys | Asp | Gly | Ala | Leu | Gln | Gly | Ile |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| Thr | Ser | Trp | Gly | Ser | Asp | Pro | Cys | Gly | Arg | Ser | Asp | Lys | Pro | Gly |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Val | Tyr | Thr | Asn | Ile | Cys | Arg | Tyr | Leu | Asp | Trp | Ile | Lys | Lys | Ile |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |
| Ile | Gly | Ser | Lys | Gly |     |     |     |     |     |     |     |     |     |     |  |
|     |     |     |     | 260 |     |     |     |     |     |     |     |     |     |     |  |

<210> 396

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 396

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<210> 397

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 397

ggtgcaatga tctgccaggc tgat 24

<210> 398

<211> 48

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 398

agaaatacct gtggttcagt ccatcccaaa cccctgctac aacagcag 48

<210> 399

<211> 2236

<212> DNA

<213> Homo sapiens

<400> 399

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cgccgcgagg ccccgcccc gcccgcccc gcccgcccc ggccggcggg 200  
ggaaccgggc ggattcctcg cgcgtcaaac cacctgatcc cataaaacat 250  
tcatactccc ggcgccccgc gctgcgagcg ccccgccagt ccgcgcgcgc 300  
gcgcacctcg cctgtgcgc cctgcgcgc ctgcgcaccc gcggcccgag 350  
cccagccaga gccgggcgga gcggagcgcg ccgagcctcg tcccgcggcc 400  
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cccaaccctt acgatgaaga gggcgtccgc tggagggagc cggctgctgg 550  
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cgtctgggcc aggcaggcag cgggggtggc gggactggtg actcagaagg 1850  
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cgctggtgct gtggacagtg cttgggccct gctgaccccc agcggacaca 1950  
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<210> 400

<211> 473

<212> PRT

<213> Homo sapiens

<400> 400

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Lys | Arg | Ala | Ser | Ala | Gly | Gly | Ser | Arg | Leu | Leu | Ala | Trp | Val |  |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |  |
| Leu | Trp | Leu | Gln | Ala | Trp | Gln | Val | Ala | Ala | Pro | Cys | Pro | Gly | Ala |  |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |  |
| Cys | Val | Cys | Tyr | Asn | Glu | Pro | Lys | Val | Thr | Thr | Ser | Cys | Pro | Gln |  |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |  |
| Gln | Gly | Leu | Gln | Ala | Val | Pro | Val | Gly | Ile | Pro | Ala | Ala | Ser | Gln |  |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |  |
| Arg | Ile | Phe | Leu | His | Gly | Asn | Arg | Ile | Ser | His | Val | Pro | Ala | Ala |  |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |  |
| Ser | Phe | Arg | Ala | Cys | Arg | Asn | Leu | Thr | Ile | Leu | Trp | Leu | His | Ser |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |  |
| Asn | Val | Leu | Ala | Arg | Ile | Asp | Ala | Ala | Ala | Phe | Thr | Gly | Leu | Ala |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |  |
| Leu | Leu | Glu | Gln | Leu | Asp | Leu | Ser | Asp | Asn | Ala | Gln | Leu | Arg | Ser |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |  |
| Val | Asp | Pro | Ala | Thr | Phe | His | Gly | Leu | Gly | Arg | Leu | His | Thr | Leu |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |
| His | Leu | Asp | Arg | Cys | Gly | Leu | Gln | Glu | Leu | Gly | Pro | Gly | Leu | Phe |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |
| Arg | Gly | Leu | Ala | Ala | Leu | Gln | Tyr | Leu | Tyr | Leu | Gln | Asp | Asn | Ala |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |
| Leu | Gln | Ala | Leu | Pro | Asp | Asp | Thr | Phe | Arg | Asp | Leu | Gly | Asn | Leu |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |
| Thr | His | Leu | Phe | Leu | His | Gly | Asn | Arg | Ile | Ser | Ser | Val | Pro | Glu |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |
| Arg | Ala | Phe | Arg | Gly | Leu | His | Ser | Leu | Asp | Arg | Leu | Leu | Leu | His |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| Gln | Asn | Arg | Val | Ala | His | Val | His | Pro | His | Ala | Phe | Arg | Asp | Leu |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| Gly | Arg | Leu | Met | Thr | Leu | Tyr | Leu | Phe | Ala | Asn | Asn | Leu | Ser | Ala |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Leu | Pro | Thr | Glu | Ala | Leu | Ala | Pro | Leu | Arg | Ala | Leu | Gln | Tyr | Leu |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |
| Arg | Leu | Asn | Asp | Asn | Pro | Trp | Val | Cys | Asp | Cys | Arg | Ala | Arg | Pro |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Trp | Ala | Trp | Leu | Gln | Lys | Phe | Arg | Gly | Ser | Ser | Ser | Glu | Val |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |
| Pro | Cys | Ser | Leu | Pro | Gln | Arg | Leu | Ala | Gly | Arg | Asp | Leu | Lys | Arg |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |
| Leu | Ala | Ala | Asn | Asp | Leu | Gln | Gly | Cys | Ala | Val | Ala | Thr | Gly | Pro |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |  |
| Tyr | His | Pro | Ile | Trp | Thr | Gly | Arg | Ala | Thr | Asp | Glu | Glu | Pro | Leu |  |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |  |
| Gly | Leu | Pro | Lys | Cys | Cys | Gln | Pro | Asp | Ala | Ala | Asp | Lys | Ala | Ser |  |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |  |
| Val | Leu | Glu | Pro | Gly | Arg | Pro | Ala | Ser | Ala | Gly | Asn | Ala | Leu | Lys |  |
|     |     |     |     | 350 |     |     |     |     | 355 |     |     |     |     | 360 |  |
| Gly | Arg | Val | Pro | Pro | Gly | Asp | Ser | Pro | Pro | Gly | Asn | Gly | Ser | Gly |  |
|     |     |     |     | 365 |     |     |     |     | 370 |     |     |     |     | 375 |  |
| Pro | Arg | His | Ile | Asn | Asp | Ser | Pro | Phe | Gly | Thr | Leu | Pro | Gly | Ser |  |
|     |     |     |     | 380 |     |     |     |     | 385 |     |     |     |     | 390 |  |
| Ala | Glu | Pro | Pro | Leu | Thr | Ala | Val | Arg | Pro | Glu | Gly | Ser | Glu | Pro |  |
|     |     |     |     | 395 |     |     |     |     | 400 |     |     |     |     | 405 |  |
| Pro | Gly | Phe | Pro | Thr | Ser | Gly | Pro | Arg | Arg | Arg | Pro | Gly | Cys | Ser |  |
|     |     |     |     | 410 |     |     |     |     | 415 |     |     |     |     | 420 |  |
| Arg | Lys | Asn | Arg | Thr | Arg | Ser | His | Cys | Arg | Leu | Gly | Gln | Ala | Gly |  |
|     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |     | 435 |  |
| Ser | Gly | Gly | Gly | Gly | Thr | Gly | Asp | Ser | Glu | Gly | Ser | Gly | Ala | Leu |  |
|     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     | 450 |  |
| Pro | Ser | Leu | Thr | Cys | Ser | Leu | Thr | Pro | Leu | Gly | Leu | Ala | Leu | Val |  |
|     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     | 465 |  |
| Leu | Trp | Thr | Val | Leu | Gly | Pro | Cys |     |     |     |     |     |     |     |  |
|     |     |     |     | 470 |     |     |     |     |     |     |     |     |     |     |  |

<210> 401

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 401

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<210> 402

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 402

ccctgcaggt cattggcagc tagg 24

<210> 403

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 403

aggcactgcc tgatgacacc ttccgcgacc tgggcaacct cacac 45

<210> 404

<211> 2738

<212> DNA

<213> Homo sapiens

<400> 404

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agcctcagat actggggact ttacagtccc acagaaccgt cctcccagga 150  
agctgaatcc agcaagaaca atggaggcca gcgggaagct catttgcaga 200  
caaaggcaag tccttttttc ctttctcctt ttgggcttat ctctggcggg 250  
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 ggttcaatat tcagtaccca tagttgactt ttacattcca taggtatttt 2600  
 attttgtagc atttccatgc caatgtttat ttcccccaat ttgtgtgtat 2650  
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<210> 405

<211> 798

<212> PRT

<213> Homo sapiens

<400> 405

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Glu | Ala | Ser | Gly | Lys | Leu | Ile | Cys | Arg | Gln | Arg | Gln | Val | Leu | 1   | 5   | 10  | 15 |
| Phe | Ser | Phe | Leu | Leu | Leu | Gly | Leu | Ser | Leu | Ala | Gly | Ala | Ala | Glu | 20  | 25  | 30  |    |
| Pro | Arg | Ser | Tyr | Ser | Val | Val | Glu | Glu | Thr | Glu | Gly | Ser | Ser | Phe | 35  | 40  | 45  |    |
| Val | Thr | Asn | Leu | Ala | Lys | Asp | Leu | Gly | Leu | Glu | Gln | Arg | Glu | Phe | 50  | 55  | 60  |    |
| Ser | Arg | Arg | Gly | Val | Arg | Val | Val | Ser | Arg | Gly | Asn | Lys | Leu | His | 65  | 70  | 75  |    |
| Leu | Gln | Leu | Asn | Gln | Glu | Thr | Ala | Asp | Leu | Leu | Leu | Asn | Glu | Lys | 80  | 85  | 90  |    |
| Leu | Asp | Arg | Glu | Asp | Leu | Cys | Gly | His | Thr | Glu | Pro | Cys | Val | Leu | 95  | 100 | 105 |    |
| Arg | Phe | Gln | Val | Leu | Leu | Glu | Ser | Pro | Phe | Glu | Phe | Phe | Gln | Ala | 110 | 115 | 120 |    |
| Glu | Leu | Gln | Val | Ile | Asp | Ile | Asn | Asp | His | Ser | Pro | Val | Phe | Leu | 125 | 130 | 135 |    |
| Asp | Lys | Gln | Met | Leu | Val | Lys | Val | Ser | Glu | Ser | Ser | Pro | Pro | Gly | 140 | 145 | 150 |    |

|   |     |     |     |
|---|-----|-----|-----|
| Thr Thr Phe Pro Leu Lys Asn Ala Glu Asp Leu Asp Val Gly Gln | 155 | 160 | 165 |
| Asn Asn Ile Glu Asn Tyr Ile Ile Ser Pro Asn Ser Tyr Phe Arg | 170 | 175 | 180 |
| Val Leu Thr Arg Lys Arg Ser Asp Gly Arg Lys Tyr Pro Glu Leu | 185 | 190 | 195 |
| Val Leu Asp Lys Ala Leu Asp Arg Glu Glu Glu Ala Glu Leu Arg | 200 | 205 | 210 |
| Leu Thr Leu Thr Ala Leu Asp Gly Gly Ser Pro Pro Arg Ser Gly | 215 | 220 | 225 |
| Thr Ala Gln Val Tyr Ile Glu Val Leu Asp Val Asn Asp Asn Ala | 230 | 235 | 240 |
| Pro Glu Phe Glu Gln Pro Phe Tyr Arg Val Gln Ile Ser Glu Asp | 245 | 250 | 255 |
| Ser Pro Val Gly Phe Leu Val Val Lys Val Ser Ala Thr Asp Val | 260 | 265 | 270 |
| Asp Thr Gly Val Asn Gly Glu Ile Ser Tyr Ser Leu Phe Gln Ala | 275 | 280 | 285 |
| Ser Glu Glu Ile Gly Lys Thr Phe Lys Ile Asn Pro Leu Thr Gly | 290 | 295 | 300 |
| Glu Ile Glu Leu Lys Lys Gln Leu Asp Phe Glu Lys Leu Gln Ser | 305 | 310 | 315 |
| Tyr Glu Val Asn Ile Glu Ala Arg Asp Ala Gly Thr Phe Ser Gly | 320 | 325 | 330 |
| Lys Cys Thr Val Leu Ile Gln Val Ile Asp Val Asn Asp His Ala | 335 | 340 | 345 |
| Pro Glu Val Thr Met Ser Ala Phe Thr Ser Pro Ile Pro Glu Asn | 350 | 355 | 360 |
| Ala Pro Glu Thr Val Val Ala Leu Phe Ser Val Ser Asp Leu Asp | 365 | 370 | 375 |
| Ser Gly Glu Asn Gly Lys Ile Ser Cys Ser Ile Gln Glu Asp Leu | 380 | 385 | 390 |
| Pro Phe Leu Leu Lys Ser Ala Glu Asn Phe Tyr Thr Leu Leu Thr | 395 | 400 | 405 |
| Glu Arg Pro Leu Asp Arg Glu Ser Arg Ala Glu Tyr Asn Ile Thr | 410 | 415 | 420 |
| Ile Thr Val Thr Asp Leu Gly Thr Pro Met Leu Ile Thr Gln Leu | 425 | 430 | 435 |

|                 |                     |                         |     |     |     |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Asn Met Thr Val | Leu Ile Ala Asp Val | Asn Asp Asn Ala Pro Ala | 440 | 445 | 450 |
| Phe Thr Gln Thr | Ser Tyr Thr Leu Phe | Val Arg Glu Asn Asn Ser | 455 | 460 | 465 |
| Pro Ala Leu His | Ile Arg Ser Val Ser | Ala Thr Asp Arg Asp Ser | 470 | 475 | 480 |
| Gly Thr Asn Ala | Gln Val Thr Tyr Ser | Leu Leu Pro Pro Gln Asp | 485 | 490 | 495 |
| Pro His Leu Pro | Leu Thr Ser Leu Val | Ser Ile Asn Ala Asp Asn | 500 | 505 | 510 |
| Gly His Leu Phe | Ala Leu Arg Ser Leu | Asp Tyr Glu Ala Leu Gln | 515 | 520 | 525 |
| Gly Phe Gln Phe | Arg Val Gly Ala Ser | Asp His Gly Ser Pro Ala | 530 | 535 | 540 |
| Leu Ser Ser Glu | Ala Leu Val Arg Val | Val Val Leu Asp Ala Asn | 545 | 550 | 555 |
| Asp Asn Ser Pro | Phe Val Leu Tyr Pro | Leu Gln Asn Gly Ser Ala | 560 | 565 | 570 |
| Pro Cys Thr Glu | Leu Val Pro Arg Ala | Ala Glu Pro Gly Tyr Leu | 575 | 580 | 585 |
| Val Thr Lys Val | Val Ala Val Asp Gly | Asp Ser Gly Gln Asn Ala | 590 | 595 | 600 |
| Trp Leu Ser Tyr | Gln Leu Leu Lys Ala | Thr Glu Leu Gly Leu Phe | 605 | 610 | 615 |
| Gly Val Trp Ala | His Asn Gly Glu Val | Arg Thr Ala Arg Leu Leu | 620 | 625 | 630 |
| Ser Glu Arg Asp | Ala Ala Lys His Arg | Leu Val Val Leu Val Lys | 635 | 640 | 645 |
| Asp Asn Gly Glu | Pro Pro Arg Ser Ala | Thr Ala Thr Leu His Val | 650 | 655 | 660 |
| Leu Leu Val Asp | Gly Phe Ser Gln Pro | Tyr Leu Pro Leu Pro Glu | 665 | 670 | 675 |
| Ala Ala Pro Thr | Gln Ala Gln Ala Asp | Leu Leu Thr Val Tyr Leu | 680 | 685 | 690 |
| Val Val Ala Leu | Ala Ser Val Ser Ser | Leu Phe Leu Phe Ser Val | 695 | 700 | 705 |
| Leu Leu Phe Val | Ala Val Arg Leu Cys | Arg Arg Ser Arg Ala Ala | 710 | 715 | 720 |

Ser Val Gly Arg Cys Leu Val Pro Glu Gly Pro Leu Pro Gly His  
725 730 735

Leu Val Asp Met Ser Gly Thr Arg Thr Leu Ser Gln Ser Tyr Gln  
740 745 750

Tyr Glu Val Cys Leu Ala Gly Gly Ser Gly Thr Asn Glu Phe Lys  
755 760 765

Phe Leu Lys Pro Ile Ile Pro Asn Phe Pro Pro Gln Cys Pro Gly  
770 775 780

Lys Glu Ile Gln Gly Asn Ser Thr Phe Pro Asn Asn Phe Gly Phe  
785 790 795

Asn Ile Gln

<210> 406

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 406

ctgagaacgc gcctgaaact gtg 23

<210> 407

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 407

agcgttgatca ttgacatcgg cg 22

<210> 408

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 408

ttagttgctc cattcaggag gatctaccct tcctcctgaa atccgcggaa 50

<210> 409

<211> 1379

<212> DNA

<213> Homo sapiens

<400> 409

acccacgcgt ccgcccacgc gtccgcccac gcgtccgccc acgcgtccgc 50  
 gcgtagccgt gcgccgattg cctctcggcc tgggcaatgg tcccggctgc 100  
 cggtcgacga ccgccccgcg tcatgcggct cctcggctgg tggcaagtat 150  
 tgctgtgggt gctgggactt cccgtccgcg gcgtggaggt tgcagaggaa 200  
 agtggtcgct tatggtcaga ggagcagcct gtcaccctc tccaggtggg 250  
 ggctgtgtac ctgggtgagg aggagctcct gcatgaccgc atgggccagg 300  
 acagggcagc agaagaggcc aatgcggtgc tggggctgga cacccaaggc 350  
 gatcacatgg tgatgctgtc tgtgattcct ggggaagctg aggacaaagt 400  
 gaggttcagag cctagcggcg tcacctgtgg tgctggagga gcggaggact 450  
 caaggtgcaa cgtccgagag agccttttct ctctggatgg cgctggagca 500  
 cacttccctg acagagaaga ggagtattac acagagccag aagtggcgga 550  
 atctgacgca gccccgacag aggactccaa taacactgaa agtctgaaat 600  
 ccccaaaggt gaactgtgag gagagaaaca ttacaggatt agaaaatttc 650  
 actctgaaaa ttttaaataat gtcacaggac cttatggatt ttctgaacct 700  
 aaacggtagt gactgtactc tagtcctgtt ttacaccccg tggtgccgct 750  
 tttctgccag tttggcccct cactttaact ctctgccccg ggcatttcca 800  
 gctcttcact ttttggcact ggatgcatct cagcacagca gcctttctac 850  
 caggtttggc accgtagctg ttcctaatat tttattattt caaggagcta 900  
 aaccaatggc cagatttaat catacagatc gaacactgga aacactgaaa 950  
 atcttcattt ttaatcagac aggtatagaa gccagaaga atgtggtggg 1000  
 aactcaagcc gaccaaatag gccctcttcc cagcactttg ataaaaagtg 1050  
 tggactgggt gcttgatatt tccttattct ttttaattag ttttattatg 1100  
 tatgctacca ttcgaactga gagtattcgg tggctaattc caggacaaga 1150  
 gcaggaacat gtggagtagt gatggtctga aagaagttgg aaagaggaac 1200  
 ttcaatcctt cgtttcagaa attagtgcga cagtttcata cattttctcc 1250  
 agtgacgtgt tgacttgaaa cttcaggcag attaaaagaa tcatttggtg 1300  
 aacaactgaa tgtataaaaa aattataaac tgggtgtttta actagtattg 1350  
 caataagcaa atgcaaaaaat attcaatag 1379



<211> 360  
<212> PRT  
<213> Homo sapiens

<400> 410

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Val | Pro | Ala | Ala | Gly | Arg | Arg | Pro | Pro | Arg | Val | Met | Arg | Leu |  |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |  |
| Leu | Gly | Trp | Trp | Gln | Val | Leu | Leu | Trp | Val | Leu | Gly | Leu | Pro | Val |  |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |  |
| Arg | Gly | Val | Glu | Val | Ala | Glu | Glu | Ser | Gly | Arg | Leu | Trp | Ser | Glu |  |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |  |
| Glu | Gln | Pro | Ala | His | Pro | Leu | Gln | Val | Gly | Ala | Val | Tyr | Leu | Gly |  |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |  |
| Glu | Glu | Glu | Leu | Leu | His | Asp | Pro | Met | Gly | Gln | Asp | Arg | Ala | Ala |  |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |  |
| Glu | Glu | Ala | Asn | Ala | Val | Leu | Gly | Leu | Asp | Thr | Gln | Gly | Asp | His |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |  |
| Met | Val | Met | Leu | Ser | Val | Ile | Pro | Gly | Glu | Ala | Glu | Asp | Lys | Val |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |  |
| Ser | Ser | Glu | Pro | Ser | Gly | Val | Thr | Cys | Gly | Ala | Gly | Gly | Ala | Glu |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |  |
| Asp | Ser | Arg | Cys | Asn | Val | Arg | Glu | Ser | Leu | Phe | Ser | Leu | Asp | Gly |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |
| Ala | Gly | Ala | His | Phe | Pro | Asp | Arg | Glu | Glu | Glu | Tyr | Tyr | Thr | Glu |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |
| Pro | Glu | Val | Ala | Glu | Ser | Asp | Ala | Ala | Pro | Thr | Glu | Asp | Ser | Asn |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |
| Asn | Thr | Glu | Ser | Leu | Lys | Ser | Pro | Lys | Val | Asn | Cys | Glu | Glu | Arg |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |
| Asn | Ile | Thr | Gly | Leu | Glu | Asn | Phe | Thr | Leu | Lys | Ile | Leu | Asn | Met |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |
| Ser | Gln | Asp | Leu | Met | Asp | Phe | Leu | Asn | Pro | Asn | Gly | Ser | Asp | Cys |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| Thr | Leu | Val | Leu | Phe | Tyr | Thr | Pro | Trp | Cys | Arg | Phe | Ser | Ala | Ser |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| Leu | Ala | Pro | His | Phe | Asn | Ser | Leu | Pro | Arg | Ala | Phe | Pro | Ala | Leu |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| His | Phe | Leu | Ala | Leu | Asp | Ala | Ser | Gln | His | Ser | Ser | Leu | Ser | Thr |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |
| Arg | Phe | Gly | Thr | Val | Ala | Val | Pro | Asn | Ile | Leu | Leu | Phe | Gln | Gly |  |

|                 |                     |                         |     |
|-----------------|---------------------|-------------------------|-----|
|                 | 260                 | 265                     | 270 |
| Ala Lys Pro Met | Ala Arg Phe Asn His | Thr Asp Arg Thr Leu Glu |     |
| 275             |                     | 280                     | 285 |
| Thr Leu Lys Ile | Phe Ile Phe Asn Gln | Thr Gly Ile Glu Ala Lys |     |
| 290             |                     | 295                     | 300 |
| Lys Asn Val Val | Val Thr Gln Ala Asp | Gln Ile Gly Pro Leu Pro |     |
| 305             |                     | 310                     | 315 |
| Ser Thr Leu Ile | Lys Ser Val Asp Trp | Leu Leu Val Phe Ser Leu |     |
| 320             |                     | 325                     | 330 |
| Phe Phe Leu Ile | Ser Phe Ile Met Tyr | Ala Thr Ile Arg Thr Glu |     |
| 335             |                     | 340                     | 345 |
| Ser Ile Arg Trp | Leu Ile Pro Gly Gln | Glu Gln Glu His Val Glu |     |
| 350             |                     | 355                     | 360 |

<210> 411  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 411  
 cacagagcca gaagtggcgg aatc 24

<210> 412  
 <211> 25  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 412  
 ccacatgttc ctgctcttgt cctgg 25

<210> 413  
 <211> 45  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 413  
 cggtagtgac tgtactctag tcctgtttta caccctgtgg tgccg 45

<210> 414  
 <211> 1196  
 <212> DNA  
 <213> Homo sapiens

<400> 414

cccggctccg ctccctctgc cccctcgggg tcgcgcgccc acgatgctgc 50  
agggccctgg ctgcgtgctg ctgctcttcc tcgcctcgca ctgctgcctg 100  
ggctcggcgc gcgggctctt cctctttggc cagcccgact tctcctacaa 150  
gcgcagcaat tgcaagccca tcccgggtcaa cctgcagctg tgccacggca 200  
tcgaatacca gaacatgcgg ctgcccgaacc tgctgggcca cgagaccatg 250  
aaggagggtgc tggagcaggc cggcgcttgg atcccgctgg tcatgaagca 300  
gtgccacccg gacaccaaga agttcctgtg ctgcgtcttc gccccgtct 350  
gcctcgatga cctagacgag accatccagc catgccactc gctctgcgtg 400  
cagggtgaagg accgctgcgc cccgggtcatg tccgccttcg gcttcccctg 450  
gcccgcacatg cttgagtgcg accgtttccc ccaggacaac gacctttgca 500  
tccccctcgc tagcagcgac cacctcctgc cagccaccga ggaagctcca 550  
aaggatatgtg aagcctgcaa aaataaaaat gatgatgaca acgacataat 600  
ggaaacgctt tgtaaaaatg attttgcact gaaaataaaa gtgaaggaga 650  
taacctacat caaccgagat accaaaatca tcctggagac caagagcaag 700  
accatttaca agctgaacgg tgtgtccgaa agggacctga agaaatcggg 750  
gctgtggctc aaagacagct tgcagtgcac ctgtgaggag atgaacgaca 800  
tcaacgcgcc ctatctggtc atgggacaga aacagggtgg ggagctgggtg 850  
atcacctcgg tgaagcggtg gcagaagggg cagagagagt tcaagcgcac 900  
ctcccgacgc atccgcaagc tgcagtgcta gtcccgcat cctgatggct 950  
ccgacaggcc tgctccagag cagggtgac catttctgct ccgggatctc 1000  
agctcccgtt ccccaagcac actcctagct gctccagtct cagcctgggc 1050  
agcttcccc tgcttttgc acgtttgcat cccagcatt tcctgagtta 1100  
taaggccaca ggagtggata gctgttttca cctaaaggaa aagcccaccc 1150  
gaatcttgta gaaatattca aactaataaa atcatgaata ttttaa 1196

<210> 415

<211> 295

<212> PRT

<213> Homo sapiens

<400> 415

Met Leu Gln Gly Pro Gly Ser Leu Leu Leu Leu Phe Leu Ala Ser

|   |     |     |     |
|---|-----|-----|-----|
| 1   | 5   | 10  | 15  |
| His Cys Cys Leu Gly Ser Ala Arg Gly Leu Phe Leu Phe Gly Gln | 20  | 25  | 30  |
| Pro Asp Phe Ser Tyr Lys Arg Ser Asn Cys Lys Pro Ile Pro Val | 35  | 40  | 45  |
| Asn Leu Gln Leu Cys His Gly Ile Glu Tyr Gln Asn Met Arg Leu | 50  | 55  | 60  |
| Pro Asn Leu Leu Gly His Glu Thr Met Lys Glu Val Leu Glu Gln | 65  | 70  | 75  |
| Ala Gly Ala Trp Ile Pro Leu Val Met Lys Gln Cys His Pro Asp | 80  | 85  | 90  |
| Thr Lys Lys Phe Leu Cys Ser Leu Phe Ala Pro Val Cys Leu Asp | 95  | 100 | 105 |
| Asp Leu Asp Glu Thr Ile Gln Pro Cys His Ser Leu Cys Val Gln | 110 | 115 | 120 |
| Val Lys Asp Arg Cys Ala Pro Val Met Ser Ala Phe Gly Phe Pro | 125 | 130 | 135 |
| Trp Pro Asp Met Leu Glu Cys Asp Arg Phe Pro Gln Asp Asn Asp | 140 | 145 | 150 |
| Leu Cys Ile Pro Leu Ala Ser Ser Asp His Leu Leu Pro Ala Thr | 155 | 160 | 165 |
| Glu Glu Ala Pro Lys Val Cys Glu Ala Cys Lys Asn Lys Asn Asp | 170 | 175 | 180 |
| Asp Asp Asn Asp Ile Met Glu Thr Leu Cys Lys Asn Asp Phe Ala | 185 | 190 | 195 |
| Leu Lys Ile Lys Val Lys Glu Ile Thr Tyr Ile Asn Arg Asp Thr | 200 | 205 | 210 |
| Lys Ile Ile Leu Glu Thr Lys Ser Lys Thr Ile Tyr Lys Leu Asn | 215 | 220 | 225 |
| Gly Val Ser Glu Arg Asp Leu Lys Lys Ser Val Leu Trp Leu Lys | 230 | 235 | 240 |
| Asp Ser Leu Gln Cys Thr Cys Glu Glu Met Asn Asp Ile Asn Ala | 245 | 250 | 255 |
| Pro Tyr Leu Val Met Gly Gln Lys Gln Gly Gly Glu Leu Val Ile | 260 | 265 | 270 |
| Thr Ser Val Lys Arg Trp Gln Lys Gly Gln Arg Glu Phe Lys Arg | 275 | 280 | 285 |
| Ile Ser Arg Ser Ile Arg Lys Leu Gln Cys                     |     |     |     |

<210> 416  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 416  
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<210> 417  
 <211> 25  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 417  
 cctcacaggt gcactgcaag ctgtc 25

<210> 418  
 <211> 47  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 418  
 ctcttcctct ttggccagcc cgacttctcc tacaagcgca gaattgc 47

<210> 419  
 <211> 1830  
 <212> DNA  
 <213> Homo sapiens

<400> 419  
 gtggaggccg ccgacgatgg cggggccgac ggaggccgag acgggggttg 50  
 ccgagccccg ggccctgtgc gcgcagcggg gccaccgcac ctacgcgcgc 100  
 cgctgggtgt tctgtctcgc gatcagcctg ctcaactgt ccaacgccac 150  
 gctgtggctc agctttgcac ctgtggctga cgtcattgct gaggacttgg 200  
 tctgtccat ggagcagatc aactggctgt cactggtcta cctcgtggta 250  
 tccaccccat ttggcgtggc ggccatctgg atcctggact ccgtcgggct 300  
 ccgtgcggcg accatcctgg gtgcgtggct gaactttgcc gggagtgtgc 350  
 tacgcatggt gccctgcatg gttgttggga cccaaaaccc atttgccttc 400

ctcatgggtg gccagagcct ctgtgccctt gccagagcc tggatcatctt 450  
ctctccagcc aagctggctg ccttgtggtt cccagagcac cagcgagcca 500  
cggccaacat gctcgccacc atgtcgaacc ctctgggcgt ccttgtggcc 550  
aatgtgctgt cccctgtgct ggtcaagaag ggtgaggaca ttccgttaat 600  
gctcgggtgc tataccatcc ctgctggcgt cgtctgcctg ctgtccacca 650  
tctgcctgtg ggagagtgtg cccccaccc cgccctctgc cggggctgcc 700  
agctccacct cagagaagtt cctggatggg ctcaagctgc agctcatgtg 750  
gaacaaggcc tatgtcatcc tggctgtgtg cttgggggga atgatcggga 800  
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cactccagtg ggttttccgg cctctgtggc gctctcttca tcacgttttg 900  
gatcctgggg gcactggctc tcggccccta tgtggaccgg accaagcact 950  
tactgaggc caccaagatt ggctgtgcc tgttctctct ggctgcgtg 1000  
ccctttgcc tggtgtcca gctgcaggga cagacccttg ccctggctgc 1050  
cacctgctcg ctgctcgggc tgtttggtt ctcggtgggc cccgtggcca 1100  
tggagtggc ggtcgagtgt tcctccccg tgggggaggg ggctgccaca 1150  
ggcatgatct ttgtgctggg gcaggccgag ggaatactca tcatgctggc 1200  
aatgacggca ctgactgtgc gacgctcgga gccgtccttg tccacctgcc 1250  
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ggctgtgca cttctctcag ctgcacctg gcggtcttct tccacacccc 1350  
ataccggcgc ctgcaggccg agtctgggga gccccctcc acccgtaacg 1400  
ccgtgggcgg cgcagactca gggccgggtg tggaccgagg gggagcagga 1450  
agggctgggg tcctggggcc cagcacggcg actccggagt gcacggcgag 1500  
gggggcctcg ctagaggacc ccagagggcc cgggagcccc caccagcct 1550  
gccaccgagc gactccccgt gcgcaaggcc cagcagccac cgacgcgccc 1600  
tcccgccccg gcagactcgc aggcagggtc caagcgtcca ggtttattga 1650  
ccgggtggg tctcactcct cttctcctc cccgtgggtg atcacgtagc 1700  
tgagcgcctt gtagtccagg ttgcccgcca catcgatgga ggcgaactgg 1750  
aacatctggt ccacctgcgg gcggggcgga aagggtcct tcggggctcc 1800  
gggagcgaat tacaagcgcg cacctgaaaa 1830

<210> 420  
<211> 560  
<212> PRT  
<213> Homo sapiens

<400> 420

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Ala | Gly | Pro | Thr | Glu | Ala | Glu | Thr | Gly | Leu | Ala | Glu | Pro | Arg |  |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |  |
| Ala | Leu | Cys | Ala | Gln | Arg | Gly | His | Arg | Thr | Tyr | Ala | Arg | Arg | Trp |  |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |  |
| Val | Phe | Leu | Leu | Ala | Ile | Ser | Leu | Leu | Asn | Cys | Ser | Asn | Ala | Thr |  |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |  |
| Leu | Trp | Leu | Ser | Phe | Ala | Pro | Val | Ala | Asp | Val | Ile | Ala | Glu | Asp |  |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |  |
| Leu | Val | Leu | Ser | Met | Glu | Gln | Ile | Asn | Trp | Leu | Ser | Leu | Val | Tyr |  |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |  |
| Leu | Val | Val | Ser | Thr | Pro | Phe | Gly | Val | Ala | Ala | Ile | Trp | Ile | Leu |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |  |
| Asp | Ser | Val | Gly | Leu | Arg | Ala | Ala | Thr | Ile | Leu | Gly | Ala | Trp | Leu |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |  |
| Asn | Phe | Ala | Gly | Ser | Val | Leu | Arg | Met | Val | Pro | Cys | Met | Val | Val |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |  |
| Gly | Thr | Gln | Asn | Pro | Phe | Ala | Phe | Leu | Met | Gly | Gly | Gln | Ser | Leu |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |
| Cys | Ala | Leu | Ala | Gln | Ser | Leu | Val | Ile | Phe | Ser | Pro | Ala | Lys | Leu |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |
| Ala | Ala | Leu | Trp | Phe | Pro | Glu | His | Gln | Arg | Ala | Thr | Ala | Asn | Met |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |
| Leu | Ala | Thr | Met | Ser | Asn | Pro | Leu | Gly | Val | Leu | Val | Ala | Asn | Val |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |
| Leu | Ser | Pro | Val | Leu | Val | Lys | Lys | Gly | Glu | Asp | Ile | Pro | Leu | Met |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |
| Leu | Gly | Val | Tyr | Thr | Ile | Pro | Ala | Gly | Val | Val | Cys | Leu | Leu | Ser |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| Thr | Ile | Cys | Leu | Trp | Glu | Ser | Val | Pro | Pro | Thr | Pro | Pro | Ser | Ala |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| Gly | Ala | Ala | Ser | Ser | Thr | Ser | Glu | Lys | Phe | Leu | Asp | Gly | Leu | Lys |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Leu | Gln | Leu | Met | Trp | Asn | Lys | Ala | Tyr | Val | Ile | Leu | Ala | Val | Cys |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |

|                     |                     |                 |         |
|---------------------|---------------------|-----------------|---------|
| Leu Gly Gly Met     | Ile Gly Ile Ser Ala | Ser Phe Ser Ala | Leu Leu |
| 260                 | 265                 |                 | 270     |
| Glu Gln Ile Leu Cys | Ala Ser Gly His     | Ser Ser Gly Phe | Ser Gly |
| 275                 | 280                 |                 | 285     |
| Leu Cys Gly Ala     | Leu Phe Ile Thr Phe | Gly Ile Leu Gly | Ala Leu |
| 290                 | 295                 |                 | 300     |
| Ala Leu Gly Pro Tyr | Val Asp Arg Thr     | Lys His Phe Thr | Glu Ala |
| 305                 | 310                 |                 | 315     |
| Thr Lys Ile Gly     | Leu Cys Leu Phe Ser | Leu Ala Cys Val | Pro Phe |
| 320                 | 325                 |                 | 330     |
| Ala Leu Val Ser     | Gln Leu Gln Gly Gln | Thr Leu Ala Leu | Ala Ala |
| 335                 | 340                 |                 | 345     |
| Thr Cys Ser Leu     | Leu Gly Leu Phe Gly | Phe Ser Val Gly | Pro Val |
| 350                 | 355                 |                 | 360     |
| Ala Met Glu Leu     | Ala Val Glu Cys Ser | Phe Pro Val Gly | Glu Gly |
| 365                 | 370                 |                 | 375     |
| Ala Ala Thr Gly     | Met Ile Phe Val Leu | Gly Gln Ala Glu | Gly Ile |
| 380                 | 385                 |                 | 390     |
| Leu Ile Met Leu     | Ala Met Thr Ala Leu | Thr Val Arg Arg | Ser Glu |
| 395                 | 400                 |                 | 405     |
| Pro Ser Leu Ser     | Thr Cys Gln Gln Gly | Glu Asp Pro Leu | Asp Trp |
| 410                 | 415                 |                 | 420     |
| Thr Val Ser Leu     | Leu Leu Met Ala Gly | Leu Cys Thr Phe | Phe Ser |
| 425                 | 430                 |                 | 435     |
| Cys Ile Leu Ala     | Val Phe Phe His Thr | Pro Tyr Arg Arg | Leu Gln |
| 440                 | 445                 |                 | 450     |
| Ala Glu Ser Gly     | Glu Pro Pro Ser Thr | Arg Asn Ala Val | Gly Gly |
| 455                 | 460                 |                 | 465     |
| Ala Asp Ser Gly     | Pro Gly Val Asp Arg | Gly Gly Ala Gly | Arg Ala |
| 470                 | 475                 |                 | 480     |
| Gly Val Leu Gly     | Pro Ser Thr Ala Thr | Pro Glu Cys Thr | Ala Arg |
| 485                 | 490                 |                 | 495     |
| Gly Ala Ser Leu     | Glu Asp Pro Arg Gly | Pro Gly Ser Pro | His Pro |
| 500                 | 505                 |                 | 510     |
| Ala Cys His Arg     | Ala Thr Pro Arg Ala | Gln Gly Pro Ala | Ala Thr |
| 515                 | 520                 |                 | 525     |
| Asp Ala Pro Ser     | Arg Pro Gly Arg Leu | Ala Gly Arg Val | Gln Ala |
| 530                 | 535                 |                 | 540     |



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Pro Trp Val Ile Thr  
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|                 |                         |                     |     |
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| Gly Tyr Leu Phe | Leu Leu Gly Asp Cys Gln | Glu Val Thr Thr Leu |     |
|                 | 20                      | 25                  | 30  |
| Thr Val Lys Tyr | Gln Val Ser Glu Glu Val | Pro Ser Gly Thr Val |     |
|                 | 35                      | 40                  | 45  |
| Ile Gly Lys Leu | Ser Gln Glu Leu Gly Arg | Glu Glu Arg Arg Arg |     |
|                 | 50                      | 55                  | 60  |
| Gln Ala Gly Ala | Ala Phe Gln Val Leu Gln | Leu Pro Gln Ala Leu |     |
|                 | 65                      | 70                  | 75  |
| Pro Ile Gln Val | Asp Ser Glu Glu Gly Leu | Leu Ser Thr Gly Arg |     |
|                 | 80                      | 85                  | 90  |
| Arg Leu Asp Arg | Glu Gln Leu Cys Arg Gln | Trp Asp Pro Cys Leu |     |
|                 | 95                      | 100                 | 105 |
| Val Ser Phe Asp | Val Leu Ala Thr Gly Asp | Leu Ala Leu Ile His |     |
|                 | 110                     | 115                 | 120 |
| Val Glu Ile Gln | Val Leu Asp Ile Asn Asp | His Gln Pro Arg Phe |     |
|                 | 125                     | 130                 | 135 |
| Pro Lys Gly Glu | Gln Glu Leu Glu Ile Ser | Glu Ser Ala Ser Leu |     |
|                 | 140                     | 145                 | 150 |
| Arg Thr Arg Ile | Pro Leu Asp Arg Ala Leu | Asp Pro Asp Thr Gly |     |
|                 | 155                     | 160                 | 165 |
| Pro Asn Thr Leu | His Thr Tyr Thr Leu Ser | Pro Ser Glu His Phe |     |
|                 | 170                     | 175                 | 180 |
| Ala Leu Asp Val | Ile Val Gly Pro Asp Glu | Thr Lys His Ala Glu |     |
|                 | 185                     | 190                 | 195 |
| Leu Ile Val Val | Lys Glu Leu Asp Arg Glu | Ile His Ser Phe Phe |     |
|                 | 200                     | 205                 | 210 |
| Asp Leu Val Leu | Thr Ala Tyr Asp Asn Gly | Asn Pro Pro Lys Ser |     |
|                 | 215                     | 220                 | 225 |
| Gly Thr Ser Leu | Val Lys Val Asn Val Leu | Asp Ser Asn Asp Asn |     |
|                 | 230                     | 235                 | 240 |
| Ser Pro Ala Phe | Ala Glu Ser Ser Leu Ala | Leu Glu Ile Gln Glu |     |
|                 | 245                     | 250                 | 255 |
| Asp Ala Ala Pro | Gly Thr Leu Leu Ile Lys | Leu Thr Ala Thr Asp |     |
|                 | 260                     | 265                 | 270 |
| Pro Asp Gln Gly | Pro Asn Gly Glu Val Glu | Phe Phe Leu Ser Lys |     |
|                 | 275                     | 280                 | 285 |
| His Met Pro Pro | Glu Val Leu Asp Thr Phe | Ser Ile Asp Ala Lys |     |
|                 | 290                     | 295                 | 300 |

|                     |   |                         |
|---------------------|---|-------------------------|
| Thr Gly Gln Val     | Ile Leu Arg Arg Pro                     | Leu Asp Tyr Glu Lys Asn |
| 305                 | 310                                     | 315                     |
| Pro Ala Tyr Glu Val | Asp Val Gln Ala Arg Asp Leu Gly Pro Asn |                         |
| 320                 | 325                                     | 330                     |
| Pro Ile Pro Ala His | Cys Lys Val Leu Ile Lys Val Leu Asp Val |                         |
| 335                 | 340                                     | 345                     |
| Asn Asp Asn Ile Pro | Ser Ile His Val Thr Trp Ala Ser Gln Pro |                         |
| 350                 | 355                                     | 360                     |
| Ser Leu Val Ser Glu | Ala Leu Pro Lys Asp Ser Phe Ile Ala Leu |                         |
| 365                 | 370                                     | 375                     |
| Val Met Ala Asp Asp | Leu Asp Ser Gly His Asn Gly Leu Val His |                         |
| 380                 | 385                                     | 390                     |
| Cys Trp Leu Ser Gln | Glu Leu Gly His Phe Arg Leu Lys Arg Thr |                         |
| 395                 | 400                                     | 405                     |
| Asn Gly Asn Thr Tyr | Met Leu Leu Thr Asn Ala Thr Leu Asp Arg |                         |
| 410                 | 415                                     | 420                     |
| Glu Gln Trp Pro Lys | Tyr Thr Leu Thr Leu Leu Ala Gln Asp Gln |                         |
| 425                 | 430                                     | 435                     |
| Gly Leu Gln Pro Leu | Ser Ala Lys Lys Gln Leu Ser Ile Gln Ile |                         |
| 440                 | 445                                     | 450                     |
| Ser Asp Ile Asn Asp | Asn Ala Pro Val Phe Glu Lys Ser Arg Tyr |                         |
| 455                 | 460                                     | 465                     |
| Glu Val Ser Thr Arg | Glu Asn Asn Leu Pro Ser Leu His Leu Ile |                         |
| 470                 | 475                                     | 480                     |
| Thr Ile Lys Ala His | Asp Ala Asp Leu Gly Ile Asn Gly Lys Val |                         |
| 485                 | 490                                     | 495                     |
| Ser Tyr Arg Ile Gln | Asp Ser Pro Val Ala His Leu Val Ala Ile |                         |
| 500                 | 505                                     | 510                     |
| Asp Ser Asn Thr Gly | Glu Val Thr Ala Gln Arg Ser Leu Asn Tyr |                         |
| 515                 | 520                                     | 525                     |
| Glu Glu Met Ala Gly | Phe Glu Phe Gln Val Ile Ala Glu Asp Ser |                         |
| 530                 | 535                                     | 540                     |
| Gly Gln Pro Met Leu | Ala Ser Ser Val Ser Val Trp Val Ser Leu |                         |
| 545                 | 550                                     | 555                     |
| Leu Asp Ala Asn Asp | Asn Ala Pro Glu Val Val Gln Pro Val Leu |                         |
| 560                 | 565                                     | 570                     |
| Ser Asp Gly Lys Ala | Ser Leu Ser Val Leu Val Asn Ala Ser Thr |                         |
| 575                 | 580                                     | 585                     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | His | Leu | Leu | Val | Pro | Ile | Glu | Thr | Pro | Asn | Gly | Leu | Gly | Pro | 590 | 595 | 600 |
| Ala | Gly | Thr | Asp | Thr | Pro | Pro | Leu | Ala | Thr | His | Ser | Ser | Arg | Pro | 605 | 610 | 615 |
| Phe | Leu | Leu | Thr | Thr | Ile | Val | Ala | Arg | Asp | Ala | Asp | Ser | Gly | Ala | 620 | 625 | 630 |
| Asn | Gly | Glu | Pro | Leu | Tyr | Ser | Ile | Arg | Asn | Gly | Asn | Glu | Ala | His | 635 | 640 | 645 |
| Leu | Phe | Ile | Leu | Asn | Pro | His | Thr | Gly | Gln | Leu | Phe | Val | Asn | Val | 650 | 655 | 660 |
| Thr | Asn | Ala | Ser | Ser | Leu | Ile | Gly | Ser | Glu | Trp | Glu | Leu | Glu | Ile | 665 | 670 | 675 |
| Val | Val | Glu | Asp | Gln | Gly | Ser | Pro | Pro | Leu | Gln | Thr | Arg | Ala | Leu | 680 | 685 | 690 |
| Leu | Arg | Val | Met | Phe | Val | Thr | Ser | Val | Asp | His | Leu | Arg | Asp | Ser | 695 | 700 | 705 |
| Ala | Arg | Lys | Pro | Gly | Ala | Leu | Ser | Met | Ser | Met | Leu | Thr | Val | Ile | 710 | 715 | 720 |
| Cys | Leu | Ala | Val | Leu | Leu | Gly | Ile | Phe | Gly | Leu | Ile | Leu | Ala | Leu | 725 | 730 | 735 |
| Phe | Met | Ser | Ile | Cys | Arg | Thr | Glu | Lys | Lys | Asp | Asn | Arg | Ala | Tyr | 740 | 745 | 750 |
| Asn | Cys | Arg | Glu | Ala | Glu | Ser | Thr | Tyr | Arg | Gln | Gln | Pro | Lys | Arg | 755 | 760 | 765 |
| Pro | Gln | Lys | His | Ile | Gln | Lys | Ala | Asp | Ile | His | Leu | Val | Pro | Val | 770 | 775 | 780 |
| Leu | Arg | Gly | Gln | Ala | Gly | Glu | Pro | Cys | Glu | Val | Gly | Gln | Ser | His | 785 | 790 | 795 |
| Lys | Asp | Val | Asp | Lys | Glu | Ala | Met | Met | Glu | Ala | Gly | Trp | Asp | Pro | 800 | 805 | 810 |
| Cys | Leu | Gln | Ala | Pro | Phe | His | Leu | Thr | Pro | Thr | Leu | Tyr | Arg | Thr | 815 | 820 | 825 |
| Leu | Arg | Asn | Gln | Gly | Asn | Gln | Gly | Ala | Pro | Ala | Glu | Ser | Arg | Glu | 830 | 835 | 840 |
| Val | Leu | Gln | Asp | Thr | Val | Asn | Leu | Leu | Phe | Asn | His | Pro | Arg | Gln | 845 | 850 | 855 |
| Arg | Asn | Ala | Ser | Arg | Glu | Asn | Leu | Asn | Leu | Pro | Glu | Pro | Gln | Pro | 860 | 865 | 870 |

|   |      |      |      |
|---|------|------|------|
| Ala Thr Gly Gln Pro Arg Ser Arg Pro Leu Lys Val Ala Gly Ser | 875  | 880  | 885  |
| Pro Thr Gly Arg Leu Ala Gly Asp Gln Gly Ser Glu Glu Ala Pro | 890  | 895  | 900  |
| Gln Arg Pro Pro Ala Ser Ser Ala Thr Leu Arg Arg Gln Arg His | 905  | 910  | 915  |
| Leu Asn Gly Lys Val Ser Pro Glu Lys Glu Ser Gly Pro Arg Gln | 920  | 925  | 930  |
| Ile Leu Arg Ser Leu Val Arg Leu Ser Val Ala Ala Phe Ala Glu | 935  | 940  | 945  |
| Arg Asn Pro Val Glu Glu Leu Thr Val Asp Ser Pro Pro Val Gln | 950  | 955  | 960  |
| Gln Ile Ser Gln Leu Leu Ser Leu Leu His Gln Gly Gln Phe Gln | 965  | 970  | 975  |
| Pro Lys Pro Asn His Arg Gly Asn Lys Tyr Leu Ala Lys Pro Gly | 980  | 985  | 990  |
| Gly Ser Arg Ser Ala Ile Pro Asp Thr Asp Gly Pro Ser Ala Arg | 995  | 1000 | 1005 |
| Ala Gly Gly Gln Thr Asp Pro Glu Gln Glu Glu Gly Pro Leu Asp | 1010 | 1015 | 1020 |
| Pro Glu Glu Asp Leu Ser Val Lys Gln Leu Leu Glu Glu Glu Leu | 1025 | 1030 | 1035 |
| Ser Ser Leu Leu Asp Pro Ser Thr Gly Leu Ala Leu Asp Arg Leu | 1040 | 1045 | 1050 |
| Ser Ala Pro Asp Pro Ala Trp Met Ala Arg Leu Ser Leu Pro Leu | 1055 | 1060 | 1065 |
| Thr Thr Asn Tyr Arg Asp Asn Val Ile Ser Pro Asp Ala Ala Ala | 1070 | 1075 | 1080 |
| Thr Glu Glu Pro Arg Thr Phe Gln Thr Phe Gly Lys Ala Glu Ala | 1085 | 1090 | 1095 |
| Pro Glu Leu Ser Pro Thr Gly Thr Arg Leu Ala Ser Thr Phe Val | 1100 | 1105 | 1110 |
| Ser Glu Met Ser Ser Leu Leu Glu Met Leu Leu Glu Gln Arg Ser | 1115 | 1120 | 1125 |
| Ser Met Pro Val Glu Ala Ala Ser Glu Ala Leu Arg Arg Leu Ser | 1130 | 1135 | 1140 |
| Val Cys Gly Arg Thr Leu Ser Leu Asp Leu Ala Thr Ser Ala Ala | 1145 | 1150 | 1155 |



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<220>

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<400> 427

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<210> 428

<211> 50

<212> DNA

<213> Artificial Sequence

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<400> 428

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<210> 429

<211> 2037

<212> DNA

<213> Homo sapiens

<400> 429

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<211> 455

<212> PRT

<213> Homo sapiens

<400> 430

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| Met | Ser | Phe | Leu | Ile | Asp | Ser | Ser | Ile | Met | Ile | Thr | Ser | Gln | Ile | 1   | 5   | 10  | 15 |
| Leu | Phe | Phe | Gly | Phe | Gly | Trp | Leu | Phe | Phe | Met | Arg | Gln | Leu | Phe | 20  | 25  | 30  |    |
| Lys | Asp | Tyr | Glu | Ile | Arg | Gln | Tyr | Val | Val | Gln | Val | Ile | Phe | Ser | 35  | 40  | 45  |    |
| Val | Thr | Phe | Ala | Phe | Ser | Cys | Thr | Met | Phe | Glu | Leu | Ile | Ile | Phe | 50  | 55  | 60  |    |
| Glu | Ile | Leu | Gly | Val | Leu | Asn | Ser | Ser | Ser | Arg | Tyr | Phe | His | Trp | 65  | 70  | 75  |    |
| Lys | Met | Asn | Leu | Cys | Val | Ile | Leu | Leu | Ile | Leu | Val | Phe | Met | Val | 80  | 85  | 90  |    |
| Pro | Phe | Tyr | Ile | Gly | Tyr | Phe | Ile | Val | Ser | Asn | Ile | Arg | Leu | Leu | 95  | 100 | 105 |    |
| His | Lys | Gln | Arg | Leu | Leu | Phe | Ser | Cys | Leu | Leu | Trp | Leu | Thr | Phe | 110 | 115 | 120 |    |
| Met | Tyr | Phe | Phe | Trp | Lys | Leu | Gly | Asp | Pro | Phe | Pro | Ile | Leu | Ser | 125 | 130 | 135 |    |
| Pro | Lys | His | Gly | Ile | Leu | Ser | Ile | Glu | Gln | Leu | Ile | Ser | Arg | Val | 140 | 145 | 150 |    |
| Gly | Val | Ile | Gly | Val | Thr | Leu | Met | Ala | Leu | Leu | Ser | Gly | Phe | Gly | 155 | 160 | 165 |    |
| Ala | Val | Asn | Cys | Pro | Tyr | Thr | Tyr | Met | Ser | Tyr | Phe | Leu | Arg | Asn | 170 | 175 | 180 |    |
| Val | Thr | Asp | Thr | Asp | Ile | Leu | Ala | Leu | Glu | Arg | Arg | Leu | Leu | Gln |     |     |     |    |

| 185   | 190 | 195 |
|---|-----|-----|
| Thr Met Asp Met Ile Ile Ser Lys Lys Lys Arg Met Ala Met Ala |     |     |
| 200   | 205 | 210 |
| Arg Arg Thr Met Phe Gln Lys Gly Glu Val His Asn Lys Pro Ser |     |     |
| 215   | 220 | 225 |
| Gly Phe Trp Gly Met Ile Lys Ser Val Thr Thr Ser Ala Ser Gly |     |     |
| 230   | 235 | 240 |
| Ser Glu Asn Leu Thr Leu Ile Gln Gln Glu Val Asp Ala Leu Glu |     |     |
| 245   | 250 | 255 |
| Glu Leu Ser Arg Gln Leu Phe Leu Glu Thr Ala Asp Leu Tyr Ala |     |     |
| 260   | 265 | 270 |
| Thr Lys Glu Arg Ile Glu Tyr Ser Lys Thr Phe Lys Gly Lys Tyr |     |     |
| 275   | 280 | 285 |
| Phe Asn Phe Leu Gly Tyr Phe Phe Ser Ile Tyr Cys Val Trp Lys |     |     |
| 290   | 295 | 300 |
| Ile Phe Met Ala Thr Ile Asn Ile Val Phe Asp Arg Val Gly Lys |     |     |
| 305   | 310 | 315 |
| Thr Asp Pro Val Thr Arg Gly Ile Glu Ile Thr Val Asn Tyr Leu |     |     |
| 320   | 325 | 330 |
| Gly Ile Gln Phe Asp Val Lys Phe Trp Ser Gln His Ile Ser Phe |     |     |
| 335   | 340 | 345 |
| Ile Leu Val Gly Ile Ile Ile Val Thr Ser Ile Arg Gly Leu Leu |     |     |
| 350   | 355 | 360 |
| Ile Thr Leu Thr Lys Phe Phe Tyr Ala Ile Ser Ser Ser Lys Ser |     |     |
| 365   | 370 | 375 |
| Ser Asn Val Ile Val Leu Leu Leu Ala Gln Ile Met Gly Met Tyr |     |     |
| 380   | 385 | 390 |
| Phe Val Ser Ser Val Leu Leu Ile Arg Met Ser Met Pro Leu Glu |     |     |
| 395   | 400 | 405 |
| Tyr Arg Thr Ile Ile Thr Glu Val Leu Gly Glu Leu Gln Phe Asn |     |     |
| 410   | 415 | 420 |
| Phe Tyr His Arg Trp Phe Asp Val Ile Phe Leu Val Ser Ala Leu |     |     |
| 425   | 430 | 435 |
| Ser Ser Ile Leu Phe Leu Tyr Leu Ala His Lys Gln Ala Pro Glu |     |     |
| 440   | 445 | 450 |
| Lys Gln Met Ala Pro   |     |     |
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<223> unknown base

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<223> Synthetic oligonucleotide probe

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<210> 434

<211> 22

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

<400> 434

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<211> 41

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

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<210> 436

<211> 3951

<212> DNA

<213> Homo sapiens

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<210> 437

<211> 1141

<212> PRT

<213> Homo sapiens

<400> 437

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| Met | Ala | Gly | Ala | Arg | Ser | Arg | Asp | Pro | Trp | Gly | Ala | Ser | Gly | Ile |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |
| Cys | Tyr | Leu | Phe | Gly | Ser | Leu | Leu | Val | Glu | Leu | Leu | Phe | Ser | Arg |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |
| Ala | Val | Ala | Phe | Asn | Leu | Asp | Val | Met | Gly | Ala | Leu | Arg | Lys | Glu |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |
| Gly | Glu | Pro | Gly | Ser | Leu | Phe | Gly | Phe | Ser | Val | Ala | Leu | His | Arg |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |
| Gln | Leu | Gln | Pro | Arg | Pro | Gln | Ser | Trp | Leu | Leu | Val | Gly | Ala | Pro |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |
| Gln | Ala | Leu | Ala | Leu | Pro | Gly | Gln | Gln | Ala | Asn | Arg | Thr | Gly | Gly |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |
| Leu | Phe | Ala | Cys | Pro | Leu | Ser | Leu | Glu | Glu | Thr | Asp | Cys | Tyr | Arg |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |

|                                     |                         |     |     |     |
|-------------------------------------|-------------------------|-----|-----|-----|
| Val Asp Ile Asp Gln Gly Ala Asp Met | Gln Lys Glu Ser Lys Glu | 110 | 115 | 120 |
| Asn Gln Trp Leu Gly Val Ser Val Arg | Ser Gln Gly Pro Gly Gly | 125 | 130 | 135 |
| Lys Ile Val Thr Cys Ala His Arg Tyr | Glu Ala Arg Gln Arg Val | 140 | 145 | 150 |
| Asp Gln Ile Leu Glu Thr Arg Asp Met | Ile Gly Arg Cys Phe Val | 155 | 160 | 165 |
| Leu Ser Gln Asp Leu Ala Ile Arg Asp | Glu Leu Asp Gly Gly Glu | 170 | 175 | 180 |
| Trp Lys Phe Cys Glu Gly Arg Pro Gln | Gly His Glu Gln Phe Gly | 185 | 190 | 195 |
| Phe Cys Gln Gln Gly Thr Ala Ala Ala | Phe Ser Pro Asp Ser His | 200 | 205 | 210 |
| Tyr Leu Leu Phe Gly Ala Pro Gly Thr | Tyr Asn Trp Lys Gly Thr | 215 | 220 | 225 |
| Ala Arg Val Glu Leu Cys Ala Gln Gly | Ser Ala Asp Leu Ala His | 230 | 235 | 240 |
| Leu Asp Asp Gly Pro Tyr Glu Ala Gly | Gly Glu Lys Glu Gln Asp | 245 | 250 | 255 |
| Pro Arg Leu Ile Pro Val Pro Ala Asn | Ser Tyr Phe Gly Phe Ser | 260 | 265 | 270 |
| Ile Asp Ser Gly Lys Gly Leu Val Arg | Ala Glu Glu Leu Ser Phe | 275 | 280 | 285 |
| Val Ala Gly Ala Pro Arg Ala Asn His | Lys Gly Ala Val Val Ile | 290 | 295 | 300 |
| Leu Arg Lys Asp Ser Ala Ser Arg Leu | Val Pro Glu Val Met Leu | 305 | 310 | 315 |
| Ser Gly Glu Arg Leu Thr Ser Gly Phe | Gly Tyr Ser Leu Ala Val | 320 | 325 | 330 |
| Ala Asp Leu Asn Ser Asp Gly Trp Pro | Asp Leu Ile Val Gly Ala | 335 | 340 | 345 |
| Pro Tyr Phe Phe Glu Arg Gln Glu Glu | Leu Gly Gly Ala Val Tyr | 350 | 355 | 360 |
| Val Tyr Leu Asn Gln Gly Gly His Trp | Ala Gly Ile Ser Pro Leu | 365 | 370 | 375 |
| Arg Leu Cys Gly Ser Pro Asp Ser Met | Phe Gly Ile Ser Leu Ala | 380 | 385 | 390 |

|   |     |     |     |
|---|-----|-----|-----|
| Val Leu Gly Asp Leu Asn Gln Asp Gly Phe Pro Asp Ile Ala Val | 395 | 400 | 405 |
| Gly Ala Pro Phe Asp Gly Asp Gly Lys Val Phe Ile Tyr His Gly | 410 | 415 | 420 |
| Ser Ser Leu Gly Val Val Ala Lys Pro Ser Gln Val Leu Glu Gly | 425 | 430 | 435 |
| Glu Ala Val Gly Ile Lys Ser Phe Gly Tyr Ser Leu Ser Gly Ser | 440 | 445 | 450 |
| Leu Asp Met Asp Gly Asn Gln Tyr Pro Asp Leu Leu Val Gly Ser | 455 | 460 | 465 |
| Leu Ala Asp Thr Ala Val Leu Phe Arg Ala Arg Pro Ile Leu His | 470 | 475 | 480 |
| Val Ser His Glu Val Ser Ile Ala Pro Arg Ser Ile Asp Leu Glu | 485 | 490 | 495 |
| Gln Pro Asn Cys Ala Gly Gly His Ser Val Cys Val Asp Leu Arg | 500 | 505 | 510 |
| Val Cys Phe Ser Tyr Ile Ala Val Pro Ser Ser Tyr Ser Pro Thr | 515 | 520 | 525 |
| Val Ala Leu Asp Tyr Val Leu Asp Ala Asp Thr Asp Arg Arg Leu | 530 | 535 | 540 |
| Arg Gly Gln Val Pro Arg Val Thr Phe Leu Ser Arg Asn Leu Glu | 545 | 550 | 555 |
| Glu Pro Lys His Gln Ala Ser Gly Thr Val Trp Leu Lys His Gln | 560 | 565 | 570 |
| His Asp Arg Val Cys Gly Asp Ala Met Phe Gln Leu Gln Glu Asn | 575 | 580 | 585 |
| Val Lys Asp Lys Leu Arg Ala Ile Val Val Thr Leu Ser Tyr Ser | 590 | 595 | 600 |
| Leu Gln Thr Pro Arg Leu Arg Arg Gln Ala Pro Gly Gln Gly Leu | 605 | 610 | 615 |
| Pro Pro Val Ala Pro Ile Leu Asn Ala His Gln Pro Ser Thr Gln | 620 | 625 | 630 |
| Arg Ala Glu Ile His Phe Leu Lys Gln Gly Cys Gly Glu Asp Lys | 635 | 640 | 645 |
| Ile Cys Gln Ser Asn Leu Gln Leu Val His Ala Arg Phe Cys Thr | 650 | 655 | 660 |
| Arg Val Ser Asp Thr Glu Phe Gln Pro Leu Pro Met Asp Val Asp | 665 | 670 | 675 |

|                 |                     |                         |     |     |     |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Gly Thr Thr Ala | Leu Phe Ala Leu Ser | Gly Gln Pro Val Ile Gly | 680 | 685 | 690 |
| Leu Glu Leu Met | Val Thr Asn Leu Pro | Ser Asp Pro Ala Gln Pro | 695 | 700 | 705 |
| Gln Ala Asp Gly | Asp Asp Ala His Glu | Ala Gln Leu Leu Val Met | 710 | 715 | 720 |
| Leu Pro Asp Ser | Leu His Tyr Ser Gly | Val Arg Ala Leu Asp Pro | 725 | 730 | 735 |
| Ala Glu Lys Pro | Leu Cys Leu Ser Asn | Glu Asn Ala Ser His Val | 740 | 745 | 750 |
| Glu Cys Glu Leu | Gly Asn Pro Met Lys | Arg Gly Ala Gln Val Thr | 755 | 760 | 765 |
| Phe Tyr Leu Ile | Leu Ser Thr Ser Gly | Ile Ser Ile Glu Thr Thr | 770 | 775 | 780 |
| Glu Leu Glu Val | Glu Leu Leu Leu Ala | Thr Ile Ser Glu Gln Glu | 785 | 790 | 795 |
| Leu His Pro Val | Ser Ala Arg Ala Arg | Val Phe Ile Glu Leu Pro | 800 | 805 | 810 |
| Leu Ser Ile Ala | Gly Met Ala Ile Pro | Gln Gln Leu Phe Phe Ser | 815 | 820 | 825 |
| Gly Val Val Arg | Gly Glu Arg Ala Met | Gln Ser Glu Arg Asp Val | 830 | 835 | 840 |
| Gly Ser Lys Val | Lys Tyr Glu Val Thr | Val Ser Asn Gln Gly Gln | 845 | 850 | 855 |
| Ser Leu Arg Thr | Leu Gly Ser Ala Phe | Leu Asn Ile Met Trp Pro | 860 | 865 | 870 |
| His Glu Ile Ala | Asn Gly Lys Trp Leu | Leu Tyr Pro Met Gln Val | 875 | 880 | 885 |
| Glu Leu Glu Gly | Gly Gln Gly Pro Gly | Gln Lys Gly Leu Cys Ser | 890 | 895 | 900 |
| Pro Arg Pro Asn | Ile Leu His Leu Asp | Val Asp Ser Arg Asp Arg | 905 | 910 | 915 |
| Arg Arg Arg Glu | Leu Glu Pro Pro Glu | Gln Gln Glu Pro Gly Glu | 920 | 925 | 930 |
| Arg Gln Glu Pro | Ser Met Ser Trp Trp | Pro Val Ser Ser Ala Glu | 935 | 940 | 945 |
| Lys Lys Lys Asn | Ile Thr Leu Asp Cys | Ala Arg Gly Thr Ala Asn | 950 | 955 | 960 |

|   |      |      |      |
|---|------|------|------|
| Cys Val Val Phe Ser Cys Pro Leu Tyr Ser Phe Asp Arg Ala Ala | 965  | 970  | 975  |
| Val Leu His Val Trp Gly Arg Leu Trp Asn Ser Thr Phe Leu Glu | 980  | 985  | 990  |
| Glu Tyr Ser Ala Val Lys Ser Leu Glu Val Ile Val Arg Ala Asn | 995  | 1000 | 1005 |
| Ile Thr Val Lys Ser Ser Ile Lys Asn Leu Met Leu Arg Asp Ala | 1010 | 1015 | 1020 |
| Ser Thr Val Ile Pro Val Met Val Tyr Leu Asp Pro Met Ala Val | 1025 | 1030 | 1035 |
| Val Ala Glu Gly Val Pro Trp Trp Val Ile Leu Leu Ala Val Leu | 1040 | 1045 | 1050 |
| Ala Gly Leu Leu Val Leu Ala Leu Leu Val Leu Leu Leu Trp Lys | 1055 | 1060 | 1065 |
| Met Gly Phe Phe Lys Arg Ala Lys His Pro Glu Ala Thr Val Pro | 1070 | 1075 | 1080 |
| Gln Tyr His Ala Val Lys Ile Pro Arg Glu Asp Arg Gln Gln Phe | 1085 | 1090 | 1095 |
| Lys Glu Glu Lys Thr Gly Thr Ile Leu Arg Asn Asn Trp Gly Ser | 1100 | 1105 | 1110 |
| Pro Arg Arg Glu Gly Pro Asp Ala His Pro Ile Leu Ala Ala Asp | 1115 | 1120 | 1125 |
| Gly His Pro Glu Leu Gly Pro Asp Gly His Pro Gly Pro Gly Thr | 1130 | 1135 | 1140 |

Ala

<210> 438

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 438

ggctgacacc gcagtgtctt tcag 24

<210> 439

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 439

gctgctgggg actgcaatgt agct 24

<210> 440

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 440

catcctccat gtctcccatg aggtctctat tgctccacga agcatc 46

<210> 441

<211> 1964

<212> DNA

<213> Homo sapiens

<400> 441

cgcgcggggc gcaggagct gagtggacgg ctcgagacgg cggcgcgtgc 50  
agcagctcca gaaagcagcg agttggcaga gcagggtgc atttccagca 100  
ggagctgcga gcacagtgtt ggctcacaac aagatgtctc aggtgtcagc 150  
cgtactgtgt gtgtgtgcag ccgcttggtg cagtcagtct ctgcagctg 200  
ccgcggcggg ggctgcagcc ggggggcggg cggacggcgg taattttctg 250  
gatgataaac aatggctcac cacaatctct cagtatgaca aggaagtcgg 300  
acagtgaac aaattccgag acgaagtaga ggatgattat ttccgcactt 350  
ggagtccagg aaaacccttc gatcaggctt tagatccagc taaggatcca 400  
tgcttaaaga tgaaatgtag tcgccataaa gtatgcattg ctcaagattc 450  
tcagactgca gtctgcatta gtcaccggag gcttacacac aggatgaaag 500  
aagcaggagt agaccatagg cagtggaggg gtcccatatt atccacctgc 550  
aagcagtgcc cagtggctta tcccagccct gtttgtgggt cagatggtca 600  
tacctactct tttcagtgc aactagaata tcaggcatgt gtcttaggaa 650  
aacagatctc agtcaaagt gaaggacatt gcccatgtcc ttcagataag 700  
cccaccagta caagcagaaa tgtaagaga gcatgcagtg acctggagtt 750  
caggggaagt gcaaacagat tgcgggactg gttcaaggcc cttcatgaaa 800  
gtggaagtca aaacaagaag acaaaaacat tgctgaggcc tgagagaagc 850  
agattcgata ccagcatctt gccaatgtgc aaggactcac ttggctggat 900

gtttaacaga cttgatacaa actatgacct gctattggac cagtcagagc 950  
 tcagaagcat ttaccttgat aagaatgaac agtgtaccaa ggcattcttc 1000  
 aattcttgtg acacatacaa ggacagttta atatctaata atgagtgggtg 1050  
 ctactgcttc cagagacagc aagaccacc ttgccagact gagctcagca 1100  
 atattcagaa gcggcaaggg gtaaagaagc tcctaggaca gtatatcccc 1150  
 ctgtgtgatg aagatgggta ctacaagcca acacaatgtc atggcagtgt 1200  
 tggacagtgc tgggtgtgtg acagatatgg aatgaagtc atgggatcca 1250  
 gaataaatgg tgttcagat tgtgctatag attttgagat ctccggagat 1300  
 tttgctagtg gcgattttca tgaatggact gatgatgagg atgatgaaga 1350  
 cgatattatg aatgatgaag atgaaattga agatgatgat gaagatgaag 1400  
 gggatgatga tgatgggtgt gatgaccatg atgtatacat ttgattgatg 1450  
 acagttgaaa tcaataaatt ctacatttct aatatttaca aaaatgatag 1500  
 cctattttaa attatcttct tccccaataa caaatgatt ctaaacctca 1550  
 catatatttt gtataattat ttgaaaaatt gcagctaaag ttatagaact 1600  
 ttatgtttta ataagaatca tttgctttga gtttttatat tccttacaca 1650  
 aaaagaaaat acatatgcag tctagtcaga caaaataaag ttttgaagtg 1700  
 ctactataat aaatttttca cgagaacaaa ctttgtaa atctccataag 1750  
 caaatgaca gctagtgtt gggatcgtac atgttaattt tttgaaagat 1800  
 aattctaagt gaaattttaa ataaataaat ttttaatgac ctgggtctta 1850  
 aggatttagg aaaaatatgc atgctttaat tgcatttcca aagtagcatc 1900  
 ttgctagacc tagatgagtc aggataacag agagatacca catgactcca 1950  
 aaaaaaaaaa aaaa 1964

<210> 442  
 <211> 436  
 <212> PRT  
 <213> Homo sapiens

<400> 442  
 Met Leu Lys Val Ser Ala Val Leu Cys Val Cys Ala Ala Ala Trp  
 1 5 10 15  
 Cys Ser Gln Ser Leu Ala Ala Ala Ala Val Ala Ala Ala Gly  
 20 25 30  
 Gly Arg Ser Asp Gly Gly Asn Phe Leu Asp Asp Lys Gln Trp Leu

| 35   | 40 | 45 |
|--|----|----|
| Thr Thr Ile Ser Gln Tyr Asp Lys Glu Val Gly Gln Trp Asn Lys<br>50 55 60    |    |    |
| Phe Arg Asp Glu Val Glu Asp Asp Tyr Phe Arg Thr Trp Ser Pro<br>65 70 75    |    |    |
| Gly Lys Pro Phe Asp Gln Ala Leu Asp Pro Ala Lys Asp Pro Cys<br>80 85 90    |    |    |
| Leu Lys Met Lys Cys Ser Arg His Lys Val Cys Ile Ala Gln Asp<br>95 100 105  |    |    |
| Ser Gln Thr Ala Val Cys Ile Ser His Arg Arg Leu Thr His Arg<br>110 115 120 |    |    |
| Met Lys Glu Ala Gly Val Asp His Arg Gln Trp Arg Gly Pro Ile<br>125 130 135 |    |    |
| Leu Ser Thr Cys Lys Gln Cys Pro Val Val Tyr Pro Ser Pro Val<br>140 145 150 |    |    |
| Cys Gly Ser Asp Gly His Thr Tyr Ser Phe Gln Cys Lys Leu Glu<br>155 160 165 |    |    |
| Tyr Gln Ala Cys Val Leu Gly Lys Gln Ile Ser Val Lys Cys Glu<br>170 175 180 |    |    |
| Gly His Cys Pro Cys Pro Ser Asp Lys Pro Thr Ser Thr Ser Arg<br>185 190 195 |    |    |
| Asn Val Lys Arg Ala Cys Ser Asp Leu Glu Phe Arg Glu Val Ala<br>200 205 210 |    |    |
| Asn Arg Leu Arg Asp Trp Phe Lys Ala Leu His Glu Ser Gly Ser<br>215 220 225 |    |    |
| Gln Asn Lys Lys Thr Lys Thr Leu Leu Arg Pro Glu Arg Ser Arg<br>230 235 240 |    |    |
| Phe Asp Thr Ser Ile Leu Pro Ile Cys Lys Asp Ser Leu Gly Trp<br>245 250 255 |    |    |
| Met Phe Asn Arg Leu Asp Thr Asn Tyr Asp Leu Leu Leu Asp Gln<br>260 265 270 |    |    |
| Ser Glu Leu Arg Ser Ile Tyr Leu Asp Lys Asn Glu Gln Cys Thr<br>275 280 285 |    |    |
| Lys Ala Phe Phe Asn Ser Cys Asp Thr Tyr Lys Asp Ser Leu Ile<br>290 295 300 |    |    |
| Ser Asn Asn Glu Trp Cys Tyr Cys Phe Gln Arg Gln Gln Asp Pro<br>305 310 315 |    |    |
| Pro Cys Gln Thr Glu Leu Ser Asn Ile Gln Lys Arg Gln Gly Val                |    |    |



|   |     |  |     |  |     |
|---|-----|--|-----|--|-----|
|   | 320 |  | 325 |  | 330 |
| Lys Lys Leu Leu Gly Gln Tyr Ile Pro Leu Cys Asp Glu Asp Gly | 335 |  | 340 |  | 345 |
| Tyr Tyr Lys Pro Thr Gln Cys His Gly Ser Val Gly Gln Cys Trp | 350 |  | 355 |  | 360 |
| Cys Val Asp Arg Tyr Gly Asn Glu Val Met Gly Ser Arg Ile Asn | 365 |  | 370 |  | 375 |
| Gly Val Ala Asp Cys Ala Ile Asp Phe Glu Ile Ser Gly Asp Phe | 380 |  | 385 |  | 390 |
| Ala Ser Gly Asp Phe His Glu Trp Thr Asp Asp Glu Asp Asp Glu | 395 |  | 400 |  | 405 |
| Asp Asp Ile Met Asn Asp Glu Asp Glu Ile Glu Asp Asp Asp Glu | 410 |  | 415 |  | 420 |
| Asp Glu Gly Asp Asp Asp Asp Gly Gly Asp Asp His Asp Val Tyr | 425 |  | 430 |  | 435 |

Ile

<210> 443  
 <211> 25  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 443  
 cagcaatatt cagaagcggc aaggg 25

<210> 444  
 <211> 28  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 444  
 catcatggtc atcaccacca tcatcatc 28

<210> 445  
 <211> 48  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 445

ggttactaca agccaacaca atgtcatggc agtggtggac agtgctgg 48

<210> 446

<211> 3617

<212> DNA

<213> Homo sapiens

<400> 446

cagactccag atttcctgt caaccacgag gagtccagag aggaaacgcg 50  
gagcggagac aacagtacct gacgcctctt tcagcccggg atcgccccag 100  
caggggatggg cgacaagatc tggctgccct tccccgtgct ccttctggcc 150  
gctctgcctc cgggtgctgct gcctggggcg gccgggttca caccttcctt 200  
cgatagcgac ttcaccttta cccttcccg cggccagaag gagtgcttct 250  
accagcccat gccctgaag gcctcgctgg agatcgagta ccaagtttta 300  
gatggagcag gattagatat tgatttccat cttgcctctc cagaaggcaa 350  
aaccttagtt tttgaacaaa gaaaatcaga tggagttcac actgtagaga 400  
ctgaagtgg tgattacatg ttctgctttg acaatacatt cagcaccatt 450  
tctgagaagg tgattttctt tgaattaatc ctggataata tgggagaaca 500  
ggcacaagaa caagaagatt ggaagaaata tattactggc acagatatat 550  
tggatatgaa actggaagac atcctggaat ccatcaacag catcaagtcc 600  
agactaagca aaagtgggca catacaaatt ctgcttagag catttgaagc 650  
tcgtgatcga aacatacaag aaagcaactt tgatagagtc aatttctggt 700  
ctatggttaa tttagtggtc atgggtgggg tgtcagccat tcaagtttat 750  
atgctgaaga gtctgtttga agataagagg aaaagtagaa cttaaaactc 800  
caaactagag tacgtaacat tgaaaaatga ggcataaaaa tgcaataaac 850  
tgttacagtc aagaccatta atggctcttct ccaaaatatt ttgagatata 900  
aaagtaggaa acaggtataa ttttaatgtg aaaattaagt cttcacttct 950  
tgtgcaagta atcctgctga tccagttgta cttaagtgtg taacaggaat 1000  
attttgcaga atataggttt aactgaatga agccatatta ataactgcat 1050  
tttcctaact ttgaaaaatt ttgcaaatgt cttaggtgat ttaaataaat 1100  
gagtattggg cctaattgca acaccagtct gtttttaaca ggttctatta 1150  
cccagaactt ttttgtaa at gcggcagtta caaattaact gtggaagttt 1200  
tcagttttta gttataaatc acctgagaat tacctaataa tggattgaat 1250

aaatcttttag actacaaaag cccaactttt ctctattttac atatgcatct 1300  
ctcctataat gtaaatagaa taatagcttt gaaatacaat taggtttttg 1350  
agattttttat aaccaaatat atttcagtgt aacatattag cagaaagcat 1400  
tagtctttgt actttgctta cattcccaaa agctgacatt ttcacgattc 1450  
ttaaaaacac aaagttacac ttactaaaat taggacatgt tttctctttg 1500  
aatgaagaa tatagtttaa aagcttcctc ctccataggg acacattttc 1550  
tctaaccctt aactaaagt taggatttta aaattaaatg tgaggtaaaa 1600  
taagtttatt ttaatatga tctgtcaagt taatatctgt caacagttaa 1650  
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taaataaata tctccttttc tgagctctaa gaattatcag aaaacaggaa 1800  
agaatttaga aaaacttgag aaaaccta ccaaaataaa attcacttaa 1850  
gtagaactat aaataaatat ctagaatctg actggctcat catgacatcc 1900  
tactcataac ataaatcaaa' ggagatgatt aatttcagtagctggaag 1950  
aaactttggc tgtaggtttt tattttctac aagaattctg gtttgaatta 2000  
tttttgtaag caggtacatt ttataaaatg taagccctac tgtaaggttt 2050  
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taaatggcc tttctgaaca ctttatttat tgatgttgaa gtaaggatta 2150  
gaaacataga ctccaagtt ttaaacacct aaatgtgaat aacctatata 2200  
tacaacaaag tttctgccat ctagcttttt gaagtctatg ggggtcttac 2250  
tcaagtacta gtaatttaac ttcacatga atgaactata atttttaagt 2300  
tatgccatt tataacgttg tttatgacta cattgtgagt tagaaacaaa 2350  
cttaaaattt ggggtataga acccctcaac aggttagtaa tgctggaatt 2400  
cttgatgagc aataatgata accagagagt gatttcattt aactcatag 2450  
tagtataaaa agagatacat ttccctctta ggccctggg agaagagcag 2500  
cttagatttc cctactggca aggtttttta aaatgaggta aatgccgtat 2550  
atgatcaatt accttaattg gccaagaaaa tgcttcaggt gtctaggggt 2600  
atcctctgca aacttgacag aacaaaggtc aataagatcc ttgcctatga 2650

ataccctcc cttttgcgct gttaaatttg caatgagaag caaatttaca 2700  
 gtaccataac taataaagca gggtagagat ataaactact gcatcttttc 2750  
 tataaaaactg tgattaagaa ttctacctct cctgtatggc tgttactgta 2800  
 ctgtactctc tgactcctta cctaacaatg aatttggtac ataactctct 2850  
 acatgtatga tttgtgccac tgatcttaaa cctatgattc agtaacttct 2900  
 taccatataa aaacgataat tgctttattt ggaaaagaat ttaggaatac 2950  
 taaggacaat tatttttata gacaaagtaa aaagacagat atttaagagg 3000  
 cataaccaa aaagcaaaac ttgtaaacag agtaaaaatc tttaatatatt 3050  
 ctaaagacat actggtttatc tgcttcatat gcttttttta atttcactat 3100  
 tccatttcta aattaaagtt atgctaaatt gagtaagctg tttatcactt 3150  
 aacagctcat tttgtctttt tcaatatata aattttaaaa atactacaat 3200  
 atttaactaa ggccaaccg atttcataa tgtagcagtt accgtgttca 3250  
 cctcacacta aggcttagag tttgctctga tatgcatttg gatgattaat 3300  
 gttatgctgt tctttcatgt gaatgtcaag acatggaggg tgtttgtaat 3350  
 tttatggtaa aattaatcct tcttacacat aatgggtgtct taaaattgac 3400  
 aaaaaatgag cacttacaat tgtatgtctc ctcaaataa gattctttat 3450  
 gtgaaatttt aaaagacatt gattccgcat gtaaggattt ttcactctgaa 3500  
 gtacaataat gcacaatcag tgttgctcaa actgctttat acttataaac 3550  
 agccatctta aataagcaac gtattgtgag tactgatatg tatataataa 3600  
 aaattatcaa aggaaaa 3617

<210> 447

<211> 229

<212> PRT

<213> Homo sapiens

<400> 447

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Asp | Lys | Ile | Trp | Leu | Pro | Phe | Pro | Val | Leu | Leu | Leu | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Leu | Pro | Pro | Val | Leu | Leu | Pro | Gly | Ala | Ala | Gly | Phe | Thr | Pro |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Leu | Asp | Ser | Asp | Phe | Thr | Phe | Thr | Leu | Pro | Ala | Gly | Gln | Lys |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Cys | Phe | Tyr | Gln | Pro | Met | Pro | Leu | Lys | Ala | Ser | Leu | Glu | Ile |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |

|                 |   |                         |     |
|-----------------|---|-------------------------|-----|
| Glu Tyr Gln Val | Leu Asp Gly Ala Gly                         | Leu Asp Ile Asp Phe His |     |
|                 | 65  | 70                      | 75  |
| Leu Ala Ser Pro | Glu Gly Lys Thr Leu Val Phe Glu Gln Arg Lys |                         |     |
|                 | 80  | 85                      | 90  |
| Ser Asp Gly Val | His Thr Val Glu Thr Glu Val Gly Asp Tyr Met |                         |     |
|                 | 95  | 100                     | 105 |
| Phe Cys Phe Asp | Asn Thr Phe Ser Thr Ile Ser Glu Lys Val Ile |                         |     |
|                 | 110   | 115                     | 120 |
| Phe Phe Glu Leu | Ile Leu Asp Asn Met Gly Glu Gln Ala Gln Glu |                         |     |
|                 | 125   | 130                     | 135 |
| Gln Glu Asp Trp | Lys Lys Tyr Ile Thr Gly Thr Asp Ile Leu Asp |                         |     |
|                 | 140   | 145                     | 150 |
| Met Lys Leu Glu | Asp Ile Leu Glu Ser Ile Asn Ser Ile Lys Ser |                         |     |
|                 | 155   | 160                     | 165 |
| Arg Leu Ser Lys | Ser Gly His Ile Gln Ile Leu Leu Arg Ala Phe |                         |     |
|                 | 170   | 175                     | 180 |
| Glu Ala Arg Asp | Arg Asn Ile Gln Glu Ser Asn Phe Asp Arg Val |                         |     |
|                 | 185   | 190                     | 195 |
| Asn Phe Trp Ser | Met Val Asn Leu Val Val Met Val Val Val Ser |                         |     |
|                 | 200   | 205                     | 210 |
| Ala Ile Gln Val | Tyr Met Leu Lys Ser Leu Phe Glu Asp Lys Arg |                         |     |
|                 | 215   | 220                     | 225 |

Lys Ser Arg Thr

<210> 448

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 448

cccagcaggg ctgggcgaca aga 23

<210> 449

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 449

gtcttccagt ttcatatcca ata 23

<210> 450

<211> 43

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 450

ccagaaggag cacggggaag ggcagccaga tcttgctgcc cat 43

<210> 451

<211> 859

<212> DNA

<213> Homo sapiens

<400> 451

ccatccctga gatcttttta taaaaaaccc agtctttgct gaccagacaa 50  
agcataccag atctcaccag agagtcgcag acactatgct gcctcccatg 100  
gccctgcca gtgtgtcctg gatgctgctt tctgcctca ttctcctgtg 150  
tcaggttcaa ggtgaagaaa ccagaagga actgccctct ccacggatca 200  
gctgtcccaa aggtccaag gcctatggct cccctgcta tgccttgttt 250  
ttgtcaccaa aatcctggat ggatgcagat ctggcttgcc agaagcggcc 300  
ctctggaaaa ctggtgtctg tgctcagtgg ggctgagga tccttcgtgt 350  
cctccctggt gaggagcatt agtaacagct actcatacat ctggattggg 400  
ctccatgacc ccacacaggg ctctgagcct gatggagatg gatgggagtg 450  
gagtagcact gatgtgatga attactttgc atgggagaaa aatccctcca 500  
ccatcttaaa ccctggccac tgtgggagcc tgtcaagaag cacaggattt 550  
ctgaagtga aagattataa ctgtgatga aagttaccct atgtctgcaa 600  
gttcaaggac tagggcaggt gggaagtcag cagcctcagc ttggcgtgca 650  
gctcatcatg gacatgagac cagtgtgaag actcaccctg gaagagaata 700  
ttctcccaa actgccctac ctgactacct tgtcatgac ctcttctttt 750  
ttcttttttc ttcaccttca tttcaggctt ttctctgtct tccatgtctt 800  
gagatctcag agaataataa taaaaatgtt actttataaa aaaaaaaaaa 850  
aaaaaaaaa 859

<210> 452

<211> 175

<212> PRT

<213> Homo sapiens

<400> 452

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Leu | Pro | Pro | Met | Ala | Leu | Pro | Ser | Val | Ser | Trp | Met | Leu | Leu |  |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |  |
| Ser | Cys | Leu | Ile | Leu | Leu | Cys | Gln | Val | Gln | Gly | Glu | Glu | Thr | Gln |  |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |  |
| Lys | Glu | Leu | Pro | Ser | Pro | Arg | Ile | Ser | Cys | Pro | Lys | Gly | Ser | Lys |  |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |  |
| Ala | Tyr | Gly | Ser | Pro | Cys | Tyr | Ala | Leu | Phe | Leu | Ser | Pro | Lys | Ser |  |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |  |
| Trp | Met | Asp | Ala | Asp | Leu | Ala | Cys | Gln | Lys | Arg | Pro | Ser | Gly | Lys |  |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |  |
| Leu | Val | Ser | Val | Leu | Ser | Gly | Ala | Glu | Gly | Ser | Phe | Val | Ser | Ser |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |  |
| Leu | Val | Arg | Ser | Ile | Ser | Asn | Ser | Tyr | Ser | Tyr | Ile | Trp | Ile | Gly |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |  |
| Leu | His | Asp | Pro | Thr | Gln | Gly | Ser | Glu | Pro | Asp | Gly | Asp | Gly | Trp |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |  |
| Glu | Trp | Ser | Ser | Thr | Asp | Val | Met | Asn | Tyr | Phe | Ala | Trp | Glu | Lys |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |
| Asn | Pro | Ser | Thr | Ile | Leu | Asn | Pro | Gly | His | Cys | Gly | Ser | Leu | Ser |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |
| Arg | Ser | Thr | Gly | Phe | Leu | Lys | Trp | Lys | Asp | Tyr | Asn | Cys | Asp | Ala |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |
| Lys | Leu | Pro | Tyr | Val | Cys | Lys | Phe | Lys | Asp |     |     |     |     |     |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     |     |  |

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<211> 550

<212> DNA

<213> Homo sapiens

<400> 453

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tctgaacagc ctccactgcg gggccctcac gctcctccca ctcttgagcc 450  
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<211> 125  
<212> PRT  
<213> Homo sapiens

<400> 454  
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35 40 45  
Asn Glu Thr Met Cys Lys Thr Thr Leu Tyr Ser Arg Glu Ile Val  
50 55 60  
Tyr Pro Phe Gln Gly Asp Ser Thr Val Thr Lys Ser Cys Ala Ser  
65 70 75  
Lys Cys Lys Pro Ser Asp Val Asp Gly Ile Gly Gln Thr Leu Pro  
80 85 90  
Val Ser Cys Cys Asn Thr Glu Leu Cys Asn Val Asp Gly Ala Pro  
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gcgcagcggg agctaccggg gtctttgtcg cgatggtagc ggcggctctc 200



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<210> 456

<211> 266

<212> PRT

<213> Homo sapiens

<400> 456

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Met | Ala | Leu | Gly | Ala | Ala | Gly | Ala | Thr | Arg | Val | Phe | Val | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Ala | Ala | Ala | Leu | Gly | Gly | His | Pro | Leu | Leu | Gly | Val | Ser |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Thr | Leu | Asn | Ser | Val | Leu | Asn | Ser | Asn | Ala | Ile | Lys | Asn | Leu |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Pro | Pro | Leu | Gly | Gly | Ala | Ala | Gly | His | Pro | Gly | Ser | Ala | Val |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Ala | Ala | Pro | Gly | Ile | Leu | Tyr | Pro | Gly | Gly | Asn | Lys | Tyr | Gln |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ile | Asp | Asn | Tyr | Gln | Pro | Tyr | Pro | Cys | Ala | Glu | Asp | Glu | Glu |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Gly | Thr | Asp | Glu | Tyr | Cys | Ala | Ser | Pro | Thr | Arg | Gly | Gly | Asp |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Gly | Val | Gln | Ile | Cys | Leu | Ala | Cys | Arg | Lys | Arg | Arg | Lys | Arg |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Met | Arg | His | Ala | Met | Cys | Cys | Pro | Gly | Asn | Tyr | Cys | Lys | Asn |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ile | Cys | Val | Ser | Ser | Asp | Gln | Asn | His | Phe | Arg | Gly | Glu | Ile |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Glu | Thr | Ile | Thr | Glu | Ser | Phe | Gly | Asn | Asp | His | Ser | Thr | Leu |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Gly | Tyr | Ser | Arg | Arg | Thr | Thr | Leu | Ser | Ser | Lys | Met | Tyr | His |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Lys | Gly | Gln | Glu | Gly | Ser | Val | Cys | Leu | Arg | Ser | Ser | Asp | Cys |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ser | Gly | Leu | Cys | Cys | Ala | Arg | His | Phe | Trp | Ser | Lys | Ile | Cys |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Pro | Val | Leu | Lys | Glu | Gly | Gln | Val | Cys | Thr | Lys | His | Arg | Arg |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Gly | Ser | His | Gly | Leu | Glu | Ile | Phe | Gln | Arg | Cys | Tyr | Cys | Gly |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Gly | Leu | Ser | Cys | Arg | Ile | Gln | Lys | Asp | His | His | Gln | Ala | Ser |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |

|     |     |     |     |     |     |     |     |     |     |     |  |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Asn | Ser | Ser | Arg | Leu | His | Thr | Cys | Gln | Arg | His |  |  |  |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |  |  |  |  |

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<212> DNA  
<213> Homo sapiens

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509, 556  
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gcgcagcggg agctaaccgg gttttttgtn gcgatggtag cggcggtttt 200  
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gggtttgagg atgggggagt agctacagga agcgaccccg cgatggcaag 200  
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gatcattctc tgttttctga tagtgtatat ggccatttta gtgggcacag 500  
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tggaactct ccgaaatcaa ggcaagagga ataaggatga actttgataa 2650  
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 <212> PRT  
 <213> Homo sapiens

<400> 459  
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 Gly Thr Asp Gln Asp Phe Tyr Ser Leu Leu Gly Val Ser Lys Thr  
 35 40 45  
 Ala Ser Ser Arg Glu Ile Arg Gln Ala Phe Lys Lys Leu Ala Leu  
 50 55 60  
 Lys Leu His Pro Asp Lys Asn Pro Asn Asn Pro Asn Ala His Gly  
 65 70 75

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Asp | Phe | Leu | Lys | Ile | Asn | Arg | Ala | Tyr | Glu | Val | Leu | Lys | Asp | Glu |  | 80  | 85  | 90  |
| Asp | Leu | Arg | Lys | Lys | Tyr | Asp | Lys | Tyr | Gly | Glu | Lys | Gly | Leu | Glu |  | 95  | 100 | 105 |
| Asp | Asn | Gln | Gly | Gly | Gln | Tyr | Glu | Ser | Trp | Asn | Tyr | Tyr | Arg | Tyr |  | 110 | 115 | 120 |
| Asp | Phe | Gly | Ile | Tyr | Asp | Asp | Asp | Pro | Glu | Ile | Ile | Thr | Leu | Glu |  | 125 | 130 | 135 |
| Arg | Arg | Glu | Phe | Asp | Ala | Ala | Val | Asn | Ser | Gly | Glu | Leu | Trp | Phe |  | 140 | 145 | 150 |
| Val | Asn | Phe | Tyr | Ser | Pro | Gly | Cys | Ser | His | Cys | His | Asp | Leu | Ala |  | 155 | 160 | 165 |
| Pro | Thr | Trp | Arg | Asp | Phe | Ala | Lys | Glu | Val | Asp | Gly | Leu | Leu | Arg |  | 170 | 175 | 180 |
| Ile | Gly | Ala | Val | Asn | Cys | Gly | Asp | Asp | Arg | Met | Leu | Cys | Arg | Met |  | 185 | 190 | 195 |
| Lys | Gly | Val | Asn | Ser | Tyr | Pro | Ser | Leu | Phe | Ile | Phe | Arg | Ser | Gly |  | 200 | 205 | 210 |
| Met | Ala | Pro | Val | Lys | Tyr | His | Gly | Asp | Arg | Ser | Lys | Glu | Ser | Leu |  | 215 | 220 | 225 |
| Val | Ser | Phe | Ala | Met | Gln | His | Val | Arg | Ser | Thr | Val | Thr | Glu | Leu |  | 230 | 235 | 240 |
| Trp | Thr | Gly | Asn | Phe | Val | Asn | Ser | Ile | Gln | Thr | Ala | Phe | Ala | Ala |  | 245 | 250 | 255 |
| Gly | Ile | Gly | Trp | Leu | Ile | Thr | Phe | Cys | Ser | Lys | Gly | Gly | Asp | Cys |  | 260 | 265 | 270 |
| Leu | Thr | Ser | Gln | Thr | Arg | Leu | Arg | Leu | Ser | Gly | Met | Leu | Phe | Leu |  | 275 | 280 | 285 |
| Asn | Ser | Leu | Asp | Ala | Lys | Glu | Ile | Tyr | Leu | Glu | Val | Ile | His | Asn |  | 290 | 295 | 300 |
| Leu | Pro | Asp | Phe | Glu | Leu | Leu | Ser | Ala | Asn | Thr | Leu | Glu | Asp | Arg |  | 305 | 310 | 315 |
| Leu | Ala | His | His | Arg | Trp | Leu | Leu | Phe | Phe | His | Phe | Gly | Lys | Asn |  | 320 | 325 | 330 |
| Glu | Asn | Ser | Asn | Asp | Pro | Glu | Leu | Lys | Lys | Leu | Lys | Thr | Leu | Leu |  | 335 | 340 | 345 |
| Lys | Asn | Asp | His | Ile | Gln | Val | Gly | Arg | Phe | Asp | Cys | Ser | Ser | Ala |  | 350 | 355 | 360 |

|   |     |     |     |
|---|-----|-----|-----|
| Pro Asp Ile Cys Ser Asn Leu Tyr Val Phe Gln Pro Ser Leu Ala | 365 | 370 | 375 |
| Val Phe Lys Gly Gln Gly Thr Lys Glu Tyr Glu Ile His His Gly | 380 | 385 | 390 |
| Lys Lys Ile Leu Tyr Asp Ile Leu Ala Phe Ala Lys Glu Ser Val | 395 | 400 | 405 |
| Asn Ser His Val Thr Thr Leu Gly Pro Gln Asn Phe Pro Ala Asn | 410 | 415 | 420 |
| Asp Lys Glu Pro Trp Leu Val Asp Phe Phe Ala Pro Trp Cys Pro | 425 | 430 | 435 |
| Pro Cys Arg Ala Leu Leu Pro Glu Leu Arg Arg Ala Ser Asn Leu | 440 | 445 | 450 |
| Leu Tyr Gly Gln Leu Lys Phe Gly Thr Leu Asp Cys Thr Val His | 455 | 460 | 465 |
| Glu Gly Leu Cys Asn Met Tyr Asn Ile Gln Ala Tyr Pro Thr Thr | 470 | 475 | 480 |
| Val Val Phe Asn Gln Ser Asn Ile His Glu Tyr Glu Gly His His | 485 | 490 | 495 |
| Ser Ala Glu Gln Ile Leu Glu Phe Ile Glu Asp Leu Met Asn Pro | 500 | 505 | 510 |
| Ser Val Val Ser Leu Thr Pro Thr Thr Phe Asn Glu Leu Val Thr | 515 | 520 | 525 |
| Gln Arg Lys His Asn Glu Val Trp Met Val Asp Phe Tyr Ser Pro | 530 | 535 | 540 |
| Trp Cys His Pro Cys Gln Val Leu Met Pro Glu Trp Lys Arg Met | 545 | 550 | 555 |
| Ala Arg Thr Leu Thr Gly Leu Ile Asn Val Gly Ser Ile Asp Cys | 560 | 565 | 570 |
| Gln Gln Tyr His Ser Phe Cys Ala Gln Glu Asn Val Gln Arg Tyr | 575 | 580 | 585 |
| Pro Glu Ile Arg Phe Phe Pro Pro Lys Ser Asn Lys Ala Tyr Gln | 590 | 595 | 600 |
| Tyr His Ser Tyr Asn Gly Trp Asn Arg Asp Ala Tyr Ser Leu Arg | 605 | 610 | 615 |
| Ile Trp Gly Leu Gly Phe Leu Pro Gln Val Ser Thr Asp Leu Thr | 620 | 625 | 630 |
| Pro Gln Thr Phe Ser Glu Lys Val Leu Gln Gly Lys Asn His Trp | 635 | 640 | 645 |



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Ile | Asp | Phe | Tyr | Ala | Pro | Trp | Cys | Gly | Pro | Cys | Gln | Asn | Phe | 650 | 655 | 660 |
| Ala | Pro | Glu | Phe | Glu | Leu | Leu | Ala | Arg | Met | Ile | Lys | Gly | Lys | Val | 665 | 670 | 675 |
| Lys | Ala | Gly | Lys | Val | Asp | Cys | Gln | Ala | Tyr | Ala | Gln | Thr | Cys | Gln | 680 | 685 | 690 |
| Lys | Ala | Gly | Ile | Arg | Ala | Tyr | Pro | Thr | Val | Lys | Phe | Tyr | Phe | Tyr | 695 | 700 | 705 |
| Glu | Arg | Ala | Lys | Arg | Asn | Phe | Gln | Glu | Glu | Gln | Ile | Asn | Thr | Arg | 710 | 715 | 720 |
| Asp | Ala | Lys | Ala | Ile | Ala | Ala | Leu | Ile | Ser | Glu | Lys | Leu | Glu | Thr | 725 | 730 | 735 |
| Leu | Arg | Asn | Gln | Gly | Lys | Arg | Asn | Lys | Asp | Glu | Leu |     |     |     | 740 | 745 |     |

<210> 460  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 460  
 actccccagg ctgttcacac tgcc 24

<210> 461  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 461  
 gatcagccag ccaataccag cagc 24

<210> 462  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 462  
 gtggtgatga tagaatgctt tgccgaatga aaggagtcaa cagctatccc 50

<210> 463  
 <211> 1818  
 <212> DNA

<213> Homo sapiens

<400> 463

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caccatcatc tactcctact tggagtcgtt ggtgaagttt ttcattcctc 150  
agaggagaaa atctgtggct ggggagattg ttctcattac tggagctggg 200  
catggaatag gcaggcagac tacttatgaa tttgcaaaac gacagagcat 250  
attggttctg tgggatatta ataagcgcgg tgtggaggaa actgcagctg 300  
agtgccgaaa actaggcgtc actgcgcgtg cgtatgtggt agactgcagc 350  
aacagagaag agatctatcg ctctctaaat caggtgaaga aagaagtggg 400  
tgatgtaaca atcgtggtga ataatgctgg gacagtatat ccagccgac 450  
ttctcagcac caaggatgaa gagattacca agacatttga ggtcaacatc 500  
ctaggacatt tttggatcac aaaagcactt cttccatcga tgatggagag 550  
aaatcatggc cacatcgtca cagtggcttc agtgtgcggc cacgaaggga 600  
ttccttacct catcccatat tgttccagca aatttgccgc tgttggcttt 650  
cacagaggtc tgacatcaga acttcaggcc ttgggaaaaa ctggtatcaa 700  
aacctcatgt ctctgccag tttttgtgaa tactgggttc accaaaaatc 750  
caagcacaag attatggcct gtattggaga cagatgaagt cgtaagaagt 800  
ctgatagatg gaatacttac caataagaaa atgatttttg ttccatcgta 850  
tatcaatatc tttctgagac tacagaagtt tcttctgaa cgcgcctcag 900  
cgatttttaa tcgtatgcag aatattcaat ttgaagcagt ggttggccac 950  
aaaatcaaaa tgaaatgaat aaataagctc cagccagaga tgtatgcatg 1000  
ataatgatat gaatagtttc gaatcaatgc tgcaaagctt tatttcacat 1050  
tttttcagtc ctgataatat taaaaacatt ggtttggcac tagcagcagt 1100  
caaacgaaca agattaatta cctgtcttcc tgtttctcaa gaatatttac 1150  
gtagtttttc ataggtctgt ttttctttc atgcctctta aaaacttctg 1200  
tgcttacata aacatactta aaaggttttc ttttaagatat tttatttttc 1250  
catttaaagg tggacaaaag ctacctccct aaaagtaa atacaagagaa 1300  
cttatttaca caggaaggt ttaagactgt tcaagtagca ttccaatctg 1350

tagccatgcc acagaatatc aacaagaaca cagaatgagt gcacagctaa 1400  
 gagatcaagt ttcagcaggc agctttatct caacctggac atattttaag 1450  
 attcagcatt tgaagatttt ccctagcctc ttcctttttc attagcccaa 1500  
 aacgggtgcaa ctctattctg gactttatta cttgattctg tcttctgtat 1550  
 aactctgaag tccaccaaaa gtggaccctc tatatttcct ccctttttat 1600  
 agtcttataa gatacattat gaaagggtgac cgactctatt ttaaattctca 1650  
 gaattttaag ttctagcccc atgataacct ttttctttgt aatttatgct 1700  
 ttcatatata cttgggtccca gagatgttta gacaatttta ggctcaaaaa 1750  
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<210> 464

<211> 300

<212> PRT

<213> Homo sapiens

<400> 464

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asn | Ile | Ile | Leu | Glu | Ile | Leu | Leu | Leu | Leu | Ile | Thr | Ile | Ile |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Ser | Tyr | Leu | Glu | Ser | Leu | Val | Lys | Phe | Phe | Ile | Pro | Gln | Arg |
|     |     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Lys | Ser | Val | Ala | Gly | Glu | Ile | Val | Leu | Ile | Thr | Gly | Ala | Gly |
|     |     |     | 35  |     |     |     |     |     | 40  |     |     |     |     | 45  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Gly | Ile | Gly | Arg | Gln | Thr | Thr | Tyr | Glu | Phe | Ala | Lys | Arg | Gln |
|     |     |     | 50  |     |     |     |     |     | 55  |     |     |     |     | 60  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Ile | Leu | Val | Leu | Trp | Asp | Ile | Asn | Lys | Arg | Gly | Val | Glu | Glu |
|     |     |     | 65  |     |     |     |     |     | 70  |     |     |     |     | 75  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ala | Ala | Glu | Cys | Arg | Lys | Leu | Gly | Val | Thr | Ala | His | Ala | Tyr |
|     |     |     | 80  |     |     |     |     |     | 85  |     |     |     |     | 90  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Val | Asp | Cys | Ser | Asn | Arg | Glu | Glu | Ile | Tyr | Arg | Ser | Leu | Asn |
|     |     |     | 95  |     |     |     |     |     | 100 |     |     |     |     | 105 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Val | Lys | Lys | Glu | Val | Gly | Asp | Val | Thr | Ile | Val | Val | Asn | Asn |
|     |     |     | 110 |     |     |     |     |     | 115 |     |     |     |     | 120 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Gly | Thr | Val | Tyr | Pro | Ala | Asp | Leu | Leu | Ser | Thr | Lys | Asp | Glu |
|     |     |     | 125 |     |     |     |     |     | 130 |     |     |     |     | 135 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Ile | Thr | Lys | Thr | Phe | Glu | Val | Asn | Ile | Leu | Gly | His | Phe | Trp |
|     |     |     | 140 |     |     |     |     |     | 145 |     |     |     |     | 150 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Thr | Lys | Ala | Leu | Leu | Pro | Ser | Met | Met | Glu | Arg | Asn | His | Gly |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

|   |                     |     |
|---|---------------------|-----|
| 155                                     | 160                 | 165 |
| His Ile Val Thr Val Ala Ser Val Cys Gly | His Glu Gly Ile Pro |     |
| 170                                     | 175                 | 180 |
| Tyr Leu Ile Pro Tyr Cys Ser Ser Lys Phe | Ala Ala Val Gly Phe |     |
| 185                                     | 190                 | 195 |
| His Arg Gly Leu Thr Ser Glu Leu Gln Ala | Leu Gly Lys Thr Gly |     |
| 200                                     | 205                 | 210 |
| Ile Lys Thr Ser Cys Leu Cys Pro Val Phe | Val Asn Thr Gly Phe |     |
| 215                                     | 220                 | 225 |
| Thr Lys Asn Pro Ser Thr Arg Leu Trp Pro | Val Leu Glu Thr Asp |     |
| 230                                     | 235                 | 240 |
| Glu Val Val Arg Ser Leu Ile Asp Gly Ile | Leu Thr Asn Lys Lys |     |
| 245                                     | 250                 | 255 |
| Met Ile Phe Val Pro Ser Tyr Ile Asn Ile | Phe Leu Arg Leu Gln |     |
| 260                                     | 265                 | 270 |
| Lys Phe Leu Pro Glu Arg Ala Ser Ala Ile | Leu Asn Arg Met Gln |     |
| 275                                     | 280                 | 285 |
| Asn Ile Gln Phe Glu Ala Val Val Gly His | Lys Ile Lys Met Lys |     |
| 290                                     | 295                 | 300 |

<210> 465

<211> 1547

<212> DNA

<213> Homo sapiens

<400> 465

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gttcccagca ggatgccccg gctctgcagg aagctgaagt gagaggcccc 100

gagagggccc agcccgcccc gggcaggatg accaaggccc ggctgttccg 150

gctgtggctg gtgctggggg cggtgttcat gatcctgctg atcatcgtgt 200

actgggacag cgcaggcgcc gcgcacttct acttgacac gtccttctct 250

aggccgcaca cggggccgcc gctgcccacg cccggggccg acagggacag 300

ggagctcacg gccgactccg atgtcgacga gtttctggac aagtttctca 350

gtgctggcgt gaagcagagc gaccttccca gaaaggagac ggagcagccg 400

cctgcgccgg ggagcatgga ggagagcgtg agaggctacg actggtcccc 450

gcgcgacgcc cggcgcagcc cagaccaggg ccggcagcag gcggagcgga 500

ggagcgtgct gcggggcttc tgcgccaact ccagcctggc cttccccacc 550

aaggagcgcg cattcgacga catccccaac tcggagctga gccacctgat 600  
cgtggacgac cggcacgggg ccatctactg ctacgtgccc aaggtggcct 650  
gcaccaactg gaagcgctg atgatcgtgc tgagcggaag cctgctgcac 700  
cgcggtgcgc cctaccgca cccgctgcgc atcccgcgcg agcacgtgca 750  
caacgccagc ggcacactga ccttcaacaa gttctggcgc cgctacggga 800  
agctctcccg ccacctcatg aaggtcaagc tcaagaagta caccaagttc 850  
ctcttcgtgc gcgaccctt cgtgcgcctg atctccgcct tccgcagcaa 900  
gttcgagctg gagaacgagg agttctaccg caagttcgcc gtgcccattgc 950  
tgcggtgta cgccaaccac accagcctgc ccgcctcggc gcgcgaggcc 1000  
ttccgcgtg gcctcaaggt gtccttcgcc aacttcattc agtacctgct 1050  
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ggaccggcag ctccgcttc ccccgagcta ccggaacagg accgccagca 1250  
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ctgtataaac tctacgaggc cgactttgtt ctcttcggct accccaagcc 1350  
cgaaaacctc ctccgagact gaaagctttc gcgttgcttt ttctcgctg 1400  
cctggaacct gacgcacgcg cactccagtt tttttatgac ctacgatttt 1450  
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<210> 466

<211> 414

<212> PRT

<213> Homo sapiens

<400> 466

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Thr | Lys | Ala | Arg | Leu | Phe | Arg | Leu | Trp | Leu | Val | Leu | Gly | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Phe | Met | Ile | Leu | Leu | Ile | Ile | Val | Tyr | Trp | Asp | Ser | Ala | Gly |
|     |     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ala | His | Phe | Tyr | Leu | His | Thr | Ser | Phe | Ser | Arg | Pro | His | Thr |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Pro | Pro | Leu | Pro | Thr | Pro | Gly | Pro | Asp | Arg | Asp | Arg | Glu | Leu |
|     |     |     | 50  |     |     |     |     |     | 55  |     |     |     |     | 60  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ala | Asp | Ser | Asp | Val | Asp | Glu | Phe | Leu | Asp | Lys | Phe | Leu | Ser | 65  | 70  | 75  |
| Ala | Gly | Val | Lys | Gln | Ser | Asp | Leu | Pro | Arg | Lys | Glu | Thr | Glu | Gln | 80  | 85  | 90  |
| Pro | Pro | Ala | Pro | Gly | Ser | Met | Glu | Glu | Ser | Val | Arg | Gly | Tyr | Asp | 95  | 100 | 105 |
| Trp | Ser | Pro | Arg | Asp | Ala | Arg | Arg | Ser | Pro | Asp | Gln | Gly | Arg | Gln | 110 | 115 | 120 |
| Gln | Ala | Glu | Arg | Arg | Ser | Val | Leu | Arg | Gly | Phe | Cys | Ala | Asn | Ser | 125 | 130 | 135 |
| Ser | Leu | Ala | Phe | Pro | Thr | Lys | Glu | Arg | Ala | Phe | Asp | Asp | Ile | Pro | 140 | 145 | 150 |
| Asn | Ser | Glu | Leu | Ser | His | Leu | Ile | Val | Asp | Asp | Arg | His | Gly | Ala | 155 | 160 | 165 |
| Ile | Tyr | Cys | Tyr | Val | Pro | Lys | Val | Ala | Cys | Thr | Asn | Trp | Lys | Arg | 170 | 175 | 180 |
| Val | Met | Ile | Val | Leu | Ser | Gly | Ser | Leu | Leu | His | Arg | Gly | Ala | Pro | 185 | 190 | 195 |
| Tyr | Arg | Asp | Pro | Leu | Arg | Ile | Pro | Arg | Glu | His | Val | His | Asn | Ala | 200 | 205 | 210 |
| Ser | Ala | His | Leu | Thr | Phe | Asn | Lys | Phe | Trp | Arg | Arg | Tyr | Gly | Lys | 215 | 220 | 225 |
| Leu | Ser | Arg | His | Leu | Met | Lys | Val | Lys | Leu | Lys | Lys | Tyr | Thr | Lys | 230 | 235 | 240 |
| Phe | Leu | Phe | Val | Arg | Asp | Pro | Phe | Val | Arg | Leu | Ile | Ser | Ala | Phe | 245 | 250 | 255 |
| Arg | Ser | Lys | Phe | Glu | Leu | Glu | Asn | Glu | Glu | Phe | Tyr | Arg | Lys | Phe | 260 | 265 | 270 |
| Ala | Val | Pro | Met | Leu | Arg | Leu | Tyr | Ala | Asn | His | Thr | Ser | Leu | Pro | 275 | 280 | 285 |
| Ala | Ser | Ala | Arg | Glu | Ala | Phe | Arg | Ala | Gly | Leu | Lys | Val | Ser | Phe | 290 | 295 | 300 |
| Ala | Asn | Phe | Ile | Gln | Tyr | Leu | Leu | Asp | Pro | His | Thr | Glu | Lys | Leu | 305 | 310 | 315 |
| Ala | Pro | Phe | Asn | Glu | His | Trp | Arg | Gln | Val | Tyr | Arg | Leu | Cys | His | 320 | 325 | 330 |
| Pro | Cys | Gln | Ile | Asp | Tyr | Asp | Phe | Val | Gly | Lys | Leu | Glu | Thr | Leu | 335 | 340 | 345 |

Asp Glu Asp Ala Ala Gln Leu Leu Gln Leu Leu Gln Val Asp Arg  
350 355 360

Gln Leu Arg Phe Pro Pro Ser Tyr Arg Asn Arg Thr Ala Ser Ser  
365 370 375

Trp Glu Glu Asp Trp Phe Ala Lys Ile Pro Leu Ala Trp Arg Gln  
380 385 390

Gln Leu Tyr Lys Leu Tyr Glu Ala Asp Phe Val Leu Phe Gly Tyr  
395 400 405

Pro Lys Pro Glu Asn Leu Leu Arg Asp  
410

<210> 467

<211> 1071

<212> DNA

<213> Homo sapiens

<400> 467

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ctttggaggt gaaagaggcc cagagtagag agagagagag accgacgtac 100  
acgggatggc tacgggaacg cgctatgccg ggaaggtggt ggtcgtgacc 150  
gggggcgggc gcggcatcgg agctgggatc gtgcgcgcct tcgtgaacag 200  
cggggccccg gtggttatct gcgacaagga tgagtctggg ggccggggccc 250  
tggagcagga gctccctgga gctgtcttta tcctctgtga tgtgactcag 300  
gaagatgatg tgaagaccct ggtttctgag accatccgcc gatttggccg 350  
cctggattgt gttgtcaaca acgctggcca ccacccaccc ccacagaggc 400  
ctgaggagac ctctgcccag ggattccgcc agctgctgga gctgaacctt 450  
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tcaagggaat gtcatcaaca tctccagcct ggtgggggca atcgccagg 550  
cccaggcagt tccctatgtg gccaccaagg gggcagtaac agccatgacc 600  
aaagctttgg ccctggatga aagtccatat ggtgtccgag tcaactgtat 650  
ctccccagga aacatctgga ccccgctgtg ggaggagctg gcagccttaa 700  
tgccagaccc tagggccaca atccgagagg gcatgctggc ccagccactg 750  
ggccgcatgg gccagcccgc tgaggtcggg gctgcggcag tgttcctggc 800  
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cagagctggg gtacgggtgc aaggccagtc ggagcacccc cgtggacgcc 900

cccgatatacc cttcctgatt tctctcattt ctacttgggg ccccttcct 950  
 aggactctcc caccccaac tccaacctgt atcagatgca gcccacaagc 1000  
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 ccataaaaac gatttgcagc c 1071

<210> 468  
 <211> 270  
 <212> PRT  
 <213> Homo sapiens

<400> 468

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Thr | Gly | Thr | Arg | Tyr | Ala | Gly | Lys | Val | Val | Val | Val | Thr |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |
| Gly | Gly | Gly | Arg | Gly | Ile | Gly | Ala | Gly | Ile | Val | Arg | Ala | Phe | Val |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |
| Asn | Ser | Gly | Ala | Arg | Val | Val | Ile | Cys | Asp | Lys | Asp | Glu | Ser | Gly |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |
| Gly | Arg | Ala | Leu | Glu | Gln | Glu | Leu | Pro | Gly | Ala | Val | Phe | Ile | Leu |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |
| Cys | Asp | Val | Thr | Gln | Glu | Asp | Asp | Val | Lys | Thr | Leu | Val | Ser | Glu |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |
| Thr | Ile | Arg | Arg | Phe | Gly | Arg | Leu | Asp | Cys | Val | Val | Asn | Asn | Ala |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |
| Gly | His | His | Pro | Pro | Pro | Gln | Arg | Pro | Glu | Glu | Thr | Ser | Ala | Gln |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |
| Gly | Phe | Arg | Gln | Leu | Leu | Glu | Leu | Asn | Leu | Leu | Gly | Thr | Tyr | Thr |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |
| Leu | Thr | Lys | Leu | Ala | Leu | Pro | Tyr | Leu | Arg | Lys | Ser | Gln | Gly | Asn |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |
| Val | Ile | Asn | Ile | Ser | Ser | Leu | Val | Gly | Ala | Ile | Gly | Gln | Ala | Gln |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |
| Ala | Val | Pro | Tyr | Val | Ala | Thr | Lys | Gly | Ala | Val | Thr | Ala | Met | Thr |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |
| Lys | Ala | Leu | Ala | Leu | Asp | Glu | Ser | Pro | Tyr | Gly | Val | Arg | Val | Asn |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |
| Cys | Ile | Ser | Pro | Gly | Asn | Ile | Trp | Thr | Pro | Leu | Trp | Glu | Glu | Leu |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |
| Ala | Ala | Leu | Met | Pro | Asp | Pro | Arg | Ala | Thr | Ile | Arg | Glu | Gly | Met |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |



Leu Ala Gln Pro Leu Gly Arg Met Gly Gln Pro Ala Glu Val Gly  
 215 220 225  
 Ala Ala Ala Val Phe Leu Ala Ser Glu Ala Asn Phe Cys Thr Gly  
 230 235 240  
 Ile Glu Leu Leu Val Thr Gly Gly Ala Glu Leu Gly Tyr Gly Cys  
 245 250 255  
 Lys Ala Ser Arg Ser Thr Pro Val Asp Ala Pro Asp Ile Pro Ser  
 260 265 270

<210> 469  
 <211> 687  
 <212> DNA  
 <213> Homo sapiens

<400> 469  
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 ccagcccagg agccccaaaa gcaagaggaa ggggcaaggg cggcctgggc 150  
 ccctggcccc tggccctcac caggtgccac tggacctggt gtcacggatg 200  
 aaaccgtatg cccgcatgga ggagtatgag aggaacatcg aggagatggt 250  
 ggcccagctg aggaacagct cagagctggc ccagagaaaag tgtgaggtca 300  
 acttgcagct gtggatgtcc aacaagagga gcctgtctcc ctggggctac 350  
 agcatcaacc acgaccccag ccgtatcccc gtggacctgc cggaggcacg 400  
 gtgcctgtgt ctgggctgtg tgaacccctt caccatgcag gaggaccgca 450  
 gcatggtgag cgtgccggtg ttcagccagg ttctgtgctg ccgccgcctc 500  
 tgcccggcac cgccccgcac agggccttgc cgccagcgcg cagtcatgga 550  
 gaccatcgct gtgggctgca cctgcatctt ctgaatcacc tggcccagaa 600  
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 ggcctatgaa aagtaaacac tgacttttga aagcaag 687

<210> 470  
 <211> 180  
 <212> PRT  
 <213> Homo sapiens

<400> 470  
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 Phe Leu Gly Leu Gly Gln Pro Arg Ser Pro Lys Ser Lys Arg Lys  
 20 25 30

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gly | Gln | Gly | Arg | Pro | Gly | Pro | Leu | Ala | Pro | Gly | Pro | His | Gln | Val |  |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |  |
| Pro | Leu | Asp | Leu | Val | Ser | Arg | Met | Lys | Pro | Tyr | Ala | Arg | Met | Glu |  |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |  |
| Glu | Tyr | Glu | Arg | Asn | Ile | Glu | Glu | Met | Val | Ala | Gln | Leu | Arg | Asn |  |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |  |
| Ser | Ser | Glu | Leu | Ala | Gln | Arg | Lys | Cys | Glu | Val | Asn | Leu | Gln | Leu |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |  |
| Trp | Met | Ser | Asn | Lys | Arg | Ser | Leu | Ser | Pro | Trp | Gly | Tyr | Ser | Ile |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |  |
| Asn | His | Asp | Pro | Ser | Arg | Ile | Pro | Val | Asp | Leu | Pro | Glu | Ala | Arg |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |  |
| Cys | Leu | Cys | Leu | Gly | Cys | Val | Asn | Pro | Phe | Thr | Met | Gln | Glu | Asp |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |
| Arg | Ser | Met | Val | Ser | Val | Pro | Val | Phe | Ser | Gln | Val | Pro | Val | Arg |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |
| Arg | Arg | Leu | Cys | Pro | Pro | Pro | Pro | Arg | Thr | Gly | Pro | Cys | Arg | Gln |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |
| Arg | Ala | Val | Met | Glu | Thr | Ile | Ala | Val | Gly | Cys | Thr | Cys | Ile | Phe |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |

<210> 471  
 <211> 2368  
 <212> DNA  
 <213> Homo sapiens

<400> 471  
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 ctccccgccg agaagcctcg ctcggcgcc aacatggcgg gtgggcgctg 150  
 cggcccgag ctaacggcgc tctggccgc ctggatcgcg gctgtggcgg 200  
 cgacggcagg ccccaggag gccgcgctgc cgccggagca gagccgggtc 250  
 cagcccatga ccgcctcaa ctggacgctg gtgatggagg gcgagtggat 300  
 gctgaaattt tacgccccat ggtgtccatc ctgccagcag actgattcag 350  
 aatgggaggc ttttgaaaag aatggtgaaa tacttcagat cagtgtgggg 400  
 aaggtagatg tcattcaaga accaggtttg agtggccgct tctttgtcac 450  
 cactctccca gcattttttc atgcaaagga tgggatattc cgccgttata 500

gtggcccagg aatcttcgaa gacctgcaga attatatctt agagaagaaa 550  
tggcaatcag tcgagcctct gactggctgg aaatccccag cttctctaac 600  
gatgtctgga atggctggtc tttttagcat ctctggcaag atatggcatc 650  
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gtgttttttcg tcatagccac cttgggttttt ggccttttta tgggtctggt 750  
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ctgagcggtc tgagcagaat cggagatcag aggaggctca tagagctgaa 850  
cagttgcagg atgcggagga ggaaaaagat gattcaaag aagaagaaaa 900  
caaagacagc cttgtagatg atgaagaaga gaaagaagat cttggcgatg 950  
aggatgaagc agaggaagaa gaggaggagg acaacttggc tgctggtgtg 1000  
gatgaggaga gaagtgagga caatgatcag gggccccag gagaggacgg 1050  
tgtgacccgg gaggaagtag agcctgagga ggctgaagaa ggcattctctg 1100  
agcaaccctg ccagctgac acagaggtgg tggaagactc cttgaggcag 1150  
cgtaaaagtc agcatgctga caagggactg tagatttaat gatgcgtttt 1200  
caagaataca caccaaaaca atatgtcagc ttcccttgg cctgcagttt 1250  
gtaccaaata ctttaattttt cctgaatgag caagcttctc ttaaaagatg 1300  
ctctctagtc atttggctc atggcagtaa gcctcatgta tactaaggag 1350  
agtcttccag gtgtgacaat caggatatag aaaaacaaac gtagtgttgg 1400  
gatctgtttg gagactggga tgggaacaag ttcatttact taggggtcag 1450  
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 gattttcctt cagtgatgtg cttttggtga aagaattaat gaactccagt 2250  
 acctgaaagt gaaagatttg attttgtttc catcttctgt aatcttccaa 2300  
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<210> 472

<211> 349

<212> PRT

<213> Homo sapiens

<400> 472

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Gly | Gly | Arg | Cys | Gly | Pro | Gln | Leu | Thr | Ala | Leu | Leu | Ala | 1   | 5   | 10  | 15 |
| Ala | Trp | Ile | Ala | Ala | Val | Ala | Ala | Thr | Ala | Gly | Pro | Glu | Glu | Ala | 20  | 25  | 30  |    |
| Ala | Leu | Pro | Pro | Glu | Gln | Ser | Arg | Val | Gln | Pro | Met | Thr | Ala | Ser | 35  | 40  | 45  |    |
| Asn | Trp | Thr | Leu | Val | Met | Glu | Gly | Glu | Trp | Met | Leu | Lys | Phe | Tyr | 50  | 55  | 60  |    |
| Ala | Pro | Trp | Cys | Pro | Ser | Cys | Gln | Gln | Thr | Asp | Ser | Glu | Trp | Glu | 65  | 70  | 75  |    |
| Ala | Phe | Ala | Lys | Asn | Gly | Glu | Ile | Leu | Gln | Ile | Ser | Val | Gly | Lys | 80  | 85  | 90  |    |
| Val | Asp | Val | Ile | Gln | Glu | Pro | Gly | Leu | Ser | Gly | Arg | Phe | Phe | Val | 95  | 100 | 105 |    |
| Thr | Thr | Leu | Pro | Ala | Phe | Phe | His | Ala | Lys | Asp | Gly | Ile | Phe | Arg | 110 | 115 | 120 |    |
| Arg | Tyr | Arg | Gly | Pro | Gly | Ile | Phe | Glu | Asp | Leu | Gln | Asn | Tyr | Ile | 125 | 130 | 135 |    |
| Leu | Glu | Lys | Lys | Trp | Gln | Ser | Val | Glu | Pro | Leu | Thr | Gly | Trp | Lys | 140 | 145 | 150 |    |
| Ser | Pro | Ala | Ser | Leu | Thr | Met | Ser | Gly | Met | Ala | Gly | Leu | Phe | Ser | 155 | 160 | 165 |    |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ile | Ser | Gly | Lys | Ile | Trp | His | Leu | His | Asn | Tyr | Phe | Thr | Val | Thr |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |
| Leu | Gly | Ile | Pro | Ala | Trp | Cys | Ser | Tyr | Val | Phe | Phe | Val | Ile | Ala |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |
| Thr | Leu | Val | Phe | Gly | Leu | Phe | Met | Gly | Leu | Val | Leu | Val | Val | Ile |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| Ser | Glu | Cys | Phe | Tyr | Val | Pro | Leu | Pro | Arg | His | Leu | Ser | Glu | Arg |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| Ser | Glu | Gln | Asn | Arg | Arg | Ser | Glu | Glu | Ala | His | Arg | Ala | Glu | Gln |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Leu | Gln | Asp | Ala | Glu | Glu | Glu | Lys | Asp | Asp | Ser | Asn | Glu | Glu | Glu |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |
| Asn | Lys | Asp | Ser | Leu | Val | Asp | Asp | Glu | Glu | Glu | Lys | Glu | Asp | Leu |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |
| Gly | Asp | Glu | Asp | Glu | Ala | Glu | Glu | Glu | Glu | Glu | Glu | Asp | Asn | Leu |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |
| Ala | Ala | Gly | Val | Asp | Glu | Glu | Arg | Ser | Glu | Ala | Asn | Asp | Gln | Gly |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |
| Pro | Pro | Gly | Glu | Asp | Gly | Val | Thr | Arg | Glu | Glu | Val | Glu | Pro | Glu |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |  |
| Glu | Ala | Glu | Glu | Gly | Ile | Ser | Glu | Gln | Pro | Cys | Pro | Ala | Asp | Thr |  |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |  |
| Glu | Val | Val | Glu | Asp | Ser | Leu | Arg | Gln | Arg | Lys | Ser | Gln | His | Ala |  |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |  |

Asp Lys Gly Leu

<210> 473  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide probe  
  
 <400> 473  
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 <210> 474  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>

<223> Synthetic oligonucleotide probe

<400> 474

ctctcctcat ccacaccagc agcc 24

<210> 475

<211> 44

<212> DNA

<213> Artificial Sequence

<220>

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<400> 475

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<210> 476

<211> 2478

<212> DNA

<213> Homo sapiens

<400> 476

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gccacatga ttgactcag agattctctt ttgtccacag acagtcattct 100  
caggggcaga aagaaaagag ctcccaaagt ctatatctat tcaggggctc 150  
tcaagaacaa tggaatatca tcttgattta gaaaatttgg atgaagatgg 200  
atatactcaa ttacacttcg actctcaaag caataccagg atagctgttg 250  
tttcagagaa aggatcgtgt gctgcatctc ctccttggcg cctcattgct 300  
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 atgttatgtg gatttcattt caataaaaaa aaactcttat caaaaaaaaaa 2450  
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2478

<210> 477  
 <211> 201  
 <212> PRT  
 <213> Homo sapiens

<400> 477  
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                     20                    25                    30  
 Val Ser Glu Lys Gly Ser Cys Ala Ala Ser Pro Pro Trp Arg Leu  
                     35                    40                    45  
 Ile Ala Val Ile Leu Gly Ile Leu Cys Leu Val Ile Leu Val Ile  
                     50                    55                    60  
 Ala Val Val Leu Gly Thr Met Gly Val Leu Ser Ser Pro Cys Pro  
                     65                    70                    75  
 Pro Asn Trp Ile Ile Tyr Glu Lys Ser Cys Tyr Leu Phe Ser Met  
                     80                    85                    90  
 Ser Leu Asn Ser Trp Asp Gly Ser Lys Arg Gln Cys Trp Gln Leu  
                     95                    100                    105  
 Gly Ser Asn Leu Leu Lys Ile Asp Ser Ser Asn Glu Leu Gly Phe  
                     110                    115                    120  
 Ile Val Lys Gln Val Ser Ser Gln Pro Asp Asn Ser Phe Trp Ile  
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 Gly Leu Ser Arg Pro Gln Thr Glu Val Pro Trp Leu Trp Glu Asp  
                     140                    145                    150  
 Gly Ser Thr Phe Ser Ser Asn Leu Phe Gln Ile Arg Thr Thr Ala  
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 Thr Gln Glu Asn Pro Ser Pro Asn Cys Val Trp Ile His Val Ser  
                     170                    175                    180  
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 Asp Phe Arg Phe Cys Ser Gln Arg Asn Gln Thr His Arg Ser Ser  
 35 40 45  
 Leu His Tyr Lys Pro Thr Pro Asp Leu Arg Ile Ser Ile Glu Asn  
 50 55 60  
 Ser Glu Glu Ala Leu Thr Val His Ala Pro Phe Pro Ala Ala His  
 65 70 75  
 Pro Ala Ser Arg Ser Phe Pro Asp Pro Arg Gly Leu Tyr His Phe  
 80 85 90

|   |     |     |     |
|---|-----|-----|-----|
| Cys Leu Tyr Trp Asn Arg His Ala Gly Arg Leu His Leu Leu Tyr | 95  | 100 | 105 |
| Gly Lys Arg Asp Phe Leu Leu Ser Asp Lys Ala Ser Ser Leu Leu | 110 | 115 | 120 |
| Cys Phe Gln His Gln Glu Glu Ser Leu Ala Gln Gly Pro Pro Leu | 125 | 130 | 135 |
| Leu Ala Thr Ser Val Thr Ser Trp Trp Ser Pro Gln Asn Ile Ser | 140 | 145 | 150 |
| Leu Pro Ser Ala Ala Ser Phe Thr Phe Ser Phe His Ser Pro Pro | 155 | 160 | 165 |
| His Thr Ala Ala His Asn Ala Ser Val Asp Met Cys Glu Leu Lys | 170 | 175 | 180 |
| Arg Asp Leu Gln Leu Leu Ser Gln Phe Leu Lys His Pro Gln Lys | 185 | 190 | 195 |
| Ala Ser Arg Arg Pro Ser Ala Ala Pro Ala Ser Gln Gln Leu Gln | 200 | 205 | 210 |
| Ser Leu Glu Ser Lys Leu Thr Ser Val Arg Phe Met Gly Asp Met | 215 | 220 | 225 |
| Val Ser Phe Glu Glu Asp Arg Ile Asn Ala Thr Val Trp Lys Leu | 230 | 235 | 240 |
| Gln Pro Thr Ala Gly Leu Gln Asp Leu His Ile His Ser Arg Gln | 245 | 250 | 255 |
| Glu Glu Glu Gln Ser Glu Ile Met Glu Tyr Ser Val Leu Leu Pro | 260 | 265 | 270 |
| Arg Thr Leu Phe Gln Arg Thr Lys Gly Arg Ser Gly Glu Ala Glu | 275 | 280 | 285 |
| Lys Arg Leu Leu Leu Val Asp Phe Ser Ser Gln Ala Leu Phe Gln | 290 | 295 | 300 |
| Asp Lys Asn Ser Ser Gln Val Leu Gly Glu Lys Val Leu Gly Ile | 305 | 310 | 315 |
| Val Val Gln Asn Thr Lys Val Ala Asn Leu Thr Glu Pro Val Val | 320 | 325 | 330 |
| Leu Thr Phe Gln His Gln Leu Gln Pro Lys Asn Val Thr Leu Gln | 335 | 340 | 345 |
| Cys Val Phe Trp Val Glu Asp Pro Thr Leu Ser Ser Pro Gly His | 350 | 355 | 360 |
| Trp Ser Ser Ala Gly Cys Glu Thr Val Arg Arg Glu Thr Gln Thr | 365 | 370 | 375 |

|   |     |     |     |
|---|-----|-----|-----|
| Ser Cys Phe Cys Asn His Leu Thr Tyr Phe Ala Val Leu Met Val | 380 | 385 | 390 |
| Ser Ser Val Glu Val Asp Ala Val His Lys His Tyr Leu Ser Leu | 395 | 400 | 405 |
| Leu Ser Tyr Val Gly Cys Val Val Ser Ala Leu Ala Cys Leu Val | 410 | 415 | 420 |
| Thr Ile Ala Ala Tyr Leu Cys Ser Arg Val Pro Leu Pro Cys Arg | 425 | 430 | 435 |
| Arg Lys Pro Arg Asp Tyr Thr Ile Lys Val His Met Asn Leu Leu | 440 | 445 | 450 |
| Leu Ala Val Phe Leu Leu Asp Thr Ser Phe Leu Leu Ser Glu Pro | 455 | 460 | 465 |
| Val Ala Leu Thr Gly Ser Glu Ala Gly Cys Arg Ala Ser Ala Ile | 470 | 475 | 480 |
| Phe Leu His Phe Ser Leu Leu Thr Cys Leu Ser Trp Met Gly Leu | 485 | 490 | 495 |
| Glu Gly Tyr Asn Leu Tyr Arg Leu Val Val Glu Val Phe Gly Thr | 500 | 505 | 510 |
| Tyr Val Pro Gly Tyr Leu Leu Lys Leu Ser Ala Met Gly Trp Gly | 515 | 520 | 525 |
| Phe Pro Ile Phe Leu Val Thr Leu Val Ala Leu Val Asp Val Asp | 530 | 535 | 540 |
| Asn Tyr Gly Pro Ile Ile Leu Ala Val His Arg Thr Pro Glu Gly | 545 | 550 | 555 |
| Val Ile Tyr Pro Ser Met Cys Trp Ile Arg Asp Ser Leu Val Ser | 560 | 565 | 570 |
| Tyr Ile Thr Asn Leu Gly Leu Phe Ser Leu Val Phe Leu Phe Asn | 575 | 580 | 585 |
| Met Ala Met Leu Ala Thr Met Val Val Gln Ile Leu Arg Leu Arg | 590 | 595 | 600 |
| Pro His Thr Gln Lys Trp Ser His Val Leu Thr Leu Leu Gly Leu | 605 | 610 | 615 |
| Ser Leu Val Leu Gly Leu Pro Trp Ala Leu Ile Phe Phe Ser Phe | 620 | 625 | 630 |
| Ala Ser Gly Thr Phe Gln Leu Val Val Leu Tyr Leu Phe Ser Ile | 635 | 640 | 645 |
| Ile Thr Ser Phe Gln Gly Phe Leu Ile Phe Ile Trp Tyr Trp Ser | 650 | 655 | 660 |

Met Arg Leu Gln Ala Arg Gly Gly Pro Ser Pro Leu Lys Ser Asn  
665 670 675

Ser Asp Ser Ala Arg Leu Pro Ile Ser Ser Gly Ser Thr Ser Ser  
680 685 690

Ser Arg Ile

<210> 484

<211> 516

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 68, 70, 84, 147

<223> unknown base

<400> 484

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<210> 485

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 485

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<210> 486

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 486

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<210> 487

<211> 2849

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 2715

<223> unknown base

<400> 487

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aagagggctc taggaaaaag ttttgatgg gattatgtgg aaactaccct 150  
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<210> 488

<211> 345

<212> PRT

<213> Homo sapiens

<400> 488

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| Met | Ser | Leu | Phe | Gly | Leu | Leu | Leu | Leu | Thr | Ser | Ala | Leu | Ala | Gly | 1   | 5   | 10  | 15 |
| Gln | Arg | Gln | Gly | Thr | Gln | Ala | Glu | Ser | Asn | Leu | Ser | Ser | Lys | Phe | 20  | 25  | 30  |    |
| Gln | Phe | Ser | Ser | Asn | Lys | Glu | Gln | Asn | Gly | Val | Gln | Asp | Pro | Gln | 35  | 40  | 45  |    |
| His | Glu | Arg | Ile | Ile | Thr | Val | Ser | Thr | Asn | Gly | Ser | Ile | His | Ser | 50  | 55  | 60  |    |
| Pro | Arg | Phe | Pro | His | Thr | Tyr | Pro | Arg | Asn | Thr | Val | Leu | Val | Trp | 65  | 70  | 75  |    |
| Arg | Leu | Val | Ala | Val | Glu | Glu | Asn | Val | Trp | Ile | Gln | Leu | Thr | Phe | 80  | 85  | 90  |    |
| Asp | Glu | Arg | Phe | Gly | Leu | Glu | Asp | Pro | Glu | Asp | Asp | Ile | Cys | Lys | 95  | 100 | 105 |    |
| Tyr | Asp | Phe | Val | Glu | Val | Glu | Glu | Pro | Ser | Asp | Gly | Thr | Ile | Leu | 110 | 115 | 120 |    |
| Gly | Arg | Trp | Cys | Gly | Ser | Gly | Thr | Val | Pro | Gly | Lys | Gln | Ile | Ser | 125 | 130 | 135 |    |
| Lys | Gly | Asn | Gln | Ile | Arg | Ile | Arg | Phe | Val | Ser | Asp | Glu | Tyr | Phe | 140 | 145 | 150 |    |
| Pro | Ser | Glu | Pro | Gly | Phe | Cys | Ile | His | Tyr | Asn | Ile | Val | Met | Pro | 155 | 160 | 165 |    |

|   |     |     |     |
|---|-----|-----|-----|
| Gln Phe Thr Glu Ala Val Ser Pro Ser Val Leu Pro Pro Ser Ala | 170 | 175 | 180 |
| Leu Pro Leu Asp Leu Leu Asn Asn Ala Ile Thr Ala Phe Ser Thr | 185 | 190 | 195 |
| Leu Glu Asp Leu Ile Arg Tyr Leu Glu Pro Glu Arg Trp Gln Leu | 200 | 205 | 210 |
| Asp Leu Glu Asp Leu Tyr Arg Pro Thr Trp Gln Leu Leu Gly Lys | 215 | 220 | 225 |
| Ala Phe Val Phe Gly Arg Lys Ser Arg Val Val Asp Leu Asn Leu | 230 | 235 | 240 |
| Leu Thr Glu Glu Val Arg Leu Tyr Ser Cys Thr Pro Arg Asn Phe | 245 | 250 | 255 |
| Ser Val Ser Ile Arg Glu Glu Leu Lys Arg Thr Asp Thr Ile Phe | 260 | 265 | 270 |
| Trp Pro Gly Cys Leu Leu Val Lys Arg Cys Gly Gly Asn Cys Ala | 275 | 280 | 285 |
| Cys Cys Leu His Asn Cys Asn Glu Cys Gln Cys Val Pro Ser Lys | 290 | 295 | 300 |
| Val Thr Lys Lys Tyr His Glu Val Leu Gln Leu Arg Pro Lys Thr | 305 | 310 | 315 |
| Gly Val Arg Gly Leu His Lys Ser Leu Thr Asp Val Ala Leu Glu | 320 | 325 | 330 |
| His His Glu Glu Cys Asp Cys Val Cys Arg Gly Ser Thr Gly Gly | 335 | 340 | 345 |

<210> 489

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 489

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<210> 490

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 490

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 <213> Artificial Sequence

<220>  
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<400> 491  
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<210> 492  
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<400> 492  
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<210> 495  
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<211> 1049

<212> PRT

<213> Homo sapiens

<400> 496

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| Met | Val | Phe | Pro | Met | Trp | Thr | Leu | Lys | Arg | Gln | Ile | Leu | Ile | Leu | 1   | 5   | 10  | 15 |
| Phe | Asn | Ile | Ile | Leu | Ile | Ser | Lys | Leu | Leu | Gly | Ala | Arg | Trp | Phe | 20  | 25  | 30  |    |
| Pro | Lys | Thr | Leu | Pro | Cys | Asp | Val | Thr | Leu | Asp | Val | Pro | Lys | Asn | 35  | 40  | 45  |    |
| His | Val | Ile | Val | Asp | Cys | Thr | Asp | Lys | His | Leu | Thr | Glu | Ile | Pro | 50  | 55  | 60  |    |
| Gly | Gly | Ile | Pro | Thr | Asn | Thr | Thr | Asn | Leu | Thr | Leu | Thr | Ile | Asn | 65  | 70  | 75  |    |
| His | Ile | Pro | Asp | Ile | Ser | Pro | Ala | Ser | Phe | His | Arg | Leu | Asp | His | 80  | 85  | 90  |    |
| Leu | Val | Glu | Ile | Asp | Phe | Arg | Cys | Asn | Cys | Val | Pro | Ile | Pro | Leu | 95  | 100 | 105 |    |
| Gly | Ser | Lys | Asn | Asn | Met | Cys | Ile | Lys | Arg | Leu | Gln | Ile | Lys | Pro | 110 | 115 | 120 |    |
| Arg | Ser | Phe | Ser | Gly | Leu | Thr | Tyr | Leu | Lys | Ser | Leu | Tyr | Leu | Asp | 125 | 130 | 135 |    |
| Gly | Asn | Gln | Leu | Leu | Glu | Ile | Pro | Gln | Gly | Leu | Pro | Pro | Ser | Leu | 140 | 145 | 150 |    |
| Gln | Leu | Leu | Ser | Leu | Glu | Ala | Asn | Asn | Ile | Phe | Ser | Ile | Arg | Lys | 155 | 160 | 165 |    |
| Glu | Asn | Leu | Thr | Glu | Leu | Ala | Asn | Ile | Glu | Ile | Leu | Tyr | Leu | Gly | 170 | 175 | 180 |    |
| Gln | Asn | Cys | Tyr | Tyr | Arg | Asn | Pro | Cys | Tyr | Val | Ser | Tyr | Ser | Ile | 185 | 190 | 195 |    |

|                                     |                         |
|-------------------------------------|-------------------------|
| Glu Lys Asp Ala Phe Leu Asn Leu Thr | Lys Leu Lys Val Leu Ser |
| 200                                 | 205 210                 |
| Leu Lys Asp Asn Asn Val Thr Ala Val | Pro Thr Val Leu Pro Ser |
| 215                                 | 220 225                 |
| Thr Leu Thr Glu Leu Tyr Leu Tyr Asn | Asn Met Ile Ala Lys Ile |
| 230                                 | 235 240                 |
| Gln Glu Asp Asp Phe Asn Asn Leu Asn | Gln Leu Gln Ile Leu Asp |
| 245                                 | 250 255                 |
| Leu Ser Gly Asn Cys Pro Arg Cys Tyr | Asn Ala Pro Phe Pro Cys |
| 260                                 | 265 270                 |
| Ala Pro Cys Lys Asn Asn Ser Pro Leu | Gln Ile Pro Val Asn Ala |
| 275                                 | 280 285                 |
| Phe Asp Ala Leu Thr Glu Leu Lys Val | Leu Arg Leu His Ser Asn |
| 290                                 | 295 300                 |
| Ser Leu Gln His Val Pro Pro Arg Trp | Phe Lys Asn Ile Asn Lys |
| 305                                 | 310 315                 |
| Leu Gln Glu Leu Asp Leu Ser Gln Asn | Phe Leu Ala Lys Glu Ile |
| 320                                 | 325 330                 |
| Gly Asp Ala Lys Phe Leu His Phe Leu | Pro Ser Leu Ile Gln Leu |
| 335                                 | 340 345                 |
| Asp Leu Ser Phe Asn Phe Glu Leu Gln | Val Tyr Arg Ala Ser Met |
| 350                                 | 355 360                 |
| Asn Leu Ser Gln Ala Phe Ser Ser Leu | Lys Ser Leu Lys Ile Leu |
| 365                                 | 370 375                 |
| Arg Ile Arg Gly Tyr Val Phe Lys Glu | Leu Lys Ser Phe Asn Leu |
| 380                                 | 385 390                 |
| Ser Pro Leu His Asn Leu Gln Asn Leu | Glu Val Leu Asp Leu Gly |
| 395                                 | 400 405                 |
| Thr Asn Phe Ile Lys Ile Ala Asn Leu | Ser Met Phe Lys Gln Phe |
| 410                                 | 415 420                 |
| Lys Arg Leu Lys Val Ile Asp Leu Ser | Val Asn Lys Ile Ser Pro |
| 425                                 | 430 435                 |
| Ser Gly Asp Ser Ser Glu Val Gly Phe | Cys Ser Asn Ala Arg Thr |
| 440                                 | 445 450                 |
| Ser Val Glu Ser Tyr Glu Pro Gln Val | Leu Glu Gln Leu His Tyr |
| 455                                 | 460 465                 |
| Phe Arg Tyr Asp Lys Tyr Ala Arg Ser | Cys Arg Phe Lys Asn Lys |
| 470                                 | 475 480                 |



|   |     |     |     |
|---|-----|-----|-----|
| Glu Ala Ser Phe Met Ser Val Asn Glu Ser Cys Tyr Lys Tyr Gly | 485 | 490 | 495 |
| Gln Thr Leu Asp Leu Ser Lys Asn Ser Ile Phe Phe Val Lys Ser | 500 | 505 | 510 |
| Ser Asp Phe Gln His Leu Ser Phe Leu Lys Cys Leu Asn Leu Ser | 515 | 520 | 525 |
| Gly Asn Leu Ile Ser Gln Thr Leu Asn Gly Ser Glu Phe Gln Pro | 530 | 535 | 540 |
| Leu Ala Glu Leu Arg Tyr Leu Asp Phe Ser Asn Asn Arg Leu Asp | 545 | 550 | 555 |
| Leu Leu His Ser Thr Ala Phe Glu Glu Leu His Lys Leu Glu Val | 560 | 565 | 570 |
| Leu Asp Ile Ser Ser Asn Ser His Tyr Phe Gln Ser Glu Gly Ile | 575 | 580 | 585 |
| Thr His Met Leu Asn Phe Thr Lys Asn Leu Lys Val Leu Gln Lys | 590 | 595 | 600 |
| Leu Met Met Asn Asp Asn Asp Ile Ser Ser Ser Thr Ser Arg Thr | 605 | 610 | 615 |
| Met Glu Ser Glu Ser Leu Arg Thr Leu Glu Phe Arg Gly Asn His | 620 | 625 | 630 |
| Leu Asp Val Leu Trp Arg Glu Gly Asp Asn Arg Tyr Leu Gln Leu | 635 | 640 | 645 |
| Phe Lys Asn Leu Leu Lys Leu Glu Glu Leu Asp Ile Ser Lys Asn | 650 | 655 | 660 |
| Ser Leu Ser Phe Leu Pro Ser Gly Val Phe Asp Gly Met Pro Pro | 665 | 670 | 675 |
| Asn Leu Lys Asn Leu Ser Leu Ala Lys Asn Gly Leu Lys Ser Phe | 680 | 685 | 690 |
| Ser Trp Lys Lys Leu Gln Cys Leu Lys Asn Leu Glu Thr Leu Asp | 695 | 700 | 705 |
| Leu Ser His Asn Gln Leu Thr Thr Val Pro Glu Arg Leu Ser Asn | 710 | 715 | 720 |
| Cys Ser Arg Ser Leu Lys Asn Leu Ile Leu Lys Asn Asn Gln Ile | 725 | 730 | 735 |
| Arg Ser Leu Thr Lys Tyr Phe Leu Gln Asp Ala Phe Gln Leu Arg | 740 | 745 | 750 |
| Tyr Leu Asp Leu Ser Ser Asn Lys Ile Gln Met Ile Gln Lys Thr | 755 | 760 | 765 |

|   |      |      |      |
|---|------|------|------|
| Ser Phe Pro Glu Asn Val Leu Asn Asn Leu Lys Met Leu Leu Leu | 770  | 775  | 780  |
| His His Asn Arg Phe Leu Cys Thr Cys Asp Ala Val Trp Phe Val | 785  | 790  | 795  |
| Trp Trp Val Asn His Thr Glu Val Thr Ile Pro Tyr Leu Ala Thr | 800  | 805  | 810  |
| Asp Val Thr Cys Val Gly Pro Gly Ala His Lys Gly Gln Ser Val | 815  | 820  | 825  |
| Ile Ser Leu Asp Leu Tyr Thr Cys Glu Leu Asp Leu Thr Asn Leu | 830  | 835  | 840  |
| Ile Leu Phe Ser Leu Ser Ile Ser Val Ser Leu Phe Leu Met Val | 845  | 850  | 855  |
| Met Met Thr Ala Ser His Leu Tyr Phe Trp Asp Val Trp Tyr Ile | 860  | 865  | 870  |
| Tyr His Phe Cys Lys Ala Lys Ile Lys Gly Tyr Gln Arg Leu Ile | 875  | 880  | 885  |
| Ser Pro Asp Cys Cys Tyr Asp Ala Phe Ile Val Tyr Asp Thr Lys | 890  | 895  | 900  |
| Asp Pro Ala Val Thr Glu Trp Val Leu Ala Glu Leu Val Ala Lys | 905  | 910  | 915  |
| Leu Glu Asp Pro Arg Glu Lys His Phe Asn Leu Cys Leu Glu Glu | 920  | 925  | 930  |
| Arg Asp Trp Leu Pro Gly Gln Pro Val Leu Glu Asn Leu Ser Gln | 935  | 940  | 945  |
| Ser Ile Gln Leu Ser Lys Lys Thr Val Phe Val Met Thr Asp Lys | 950  | 955  | 960  |
| Tyr Ala Lys Thr Glu Asn Phe Lys Ile Ala Phe Tyr Leu Ser His | 965  | 970  | 975  |
| Gln Arg Leu Met Asp Glu Lys Val Asp Val Ile Ile Leu Ile Phe | 980  | 985  | 990  |
| Leu Glu Lys Pro Phe Gln Lys Ser Lys Phe Leu Gln Leu Arg Lys | 995  | 1000 | 1005 |
| Arg Leu Cys Gly Ser Ser Val Leu Glu Trp Pro Thr Asn Pro Gln | 1010 | 1015 | 1020 |
| Ala His Pro Tyr Phe Trp Gln Cys Leu Lys Asn Ala Leu Ala Thr | 1025 | 1030 | 1035 |
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<211> 1041

<212> PRT

<213> Homo sapiens

<400> 498

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Ser Arg Ser Tyr Pro Cys Asp Glu Lys Lys Gln Asn Asp Ser Val  
35 40 45

Ile Ala Glu Cys Ser Asn Arg Arg Leu Gln Glu Val Pro Gln Thr  
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Val Gly Lys Tyr Val Thr Glu Leu Asp Leu Ser Asp Asn Phe Ile  
65 70 75

Thr His Ile Thr Asn Glu Ser Phe Gln Gly Leu Gln Asn Leu Thr  
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Lys Ile Asn Leu Asn His Asn Pro Asn Val Gln His Gln Asn Gly  
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Asn Pro Gly Ile Gln Ser Asn Gly Leu Asn Ile Thr Asp Gly Ala  
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Phe Leu Asn Leu Lys Asn Leu Arg Glu Leu Leu Leu Glu Asp Asn  
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Gln Leu Pro Gln Ile Pro Ser Gly Leu Pro Glu Ser Leu Thr Glu  
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Leu Ser Leu Ile Gln Asn Asn Ile Tyr Asn Ile Thr Lys Glu Gly  
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Ile Ser Arg Leu Ile Asn Leu Lys Asn Leu Tyr Leu Ala Trp Asn  
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Cys Tyr Phe Asn Lys Val Cys Glu Lys Thr Asn Ile Glu Asp Gly  
185 190 195

Val Phe Glu Thr Leu Thr Asn Leu Glu Leu Leu Ser Leu Ser Phe  
200 205 210

Asn Ser Leu Ser His Val Pro Pro Lys Leu Pro Ser Ser Leu Arg  
215 220 225

Lys Leu Phe Leu Ser Asn Thr Gln Ile Lys Tyr Ile Ser Glu Glu  
230 235 240

|   |     |     |     |
|---|-----|-----|-----|
| Asp Phe Lys Gly Leu Ile Asn Leu Thr Leu Leu Asp Leu Ser Gly | 245 | 250 | 255 |
| Asn Cys Pro Arg Cys Phe Asn Ala Pro Phe Pro Cys Val Pro Cys | 260 | 265 | 270 |
| Asp Gly Gly Ala Ser Ile Asn Ile Asp Arg Phe Ala Phe Gln Asn | 275 | 280 | 285 |
| Leu Thr Gln Leu Arg Tyr Leu Asn Leu Ser Ser Thr Ser Leu Arg | 290 | 295 | 300 |
| Lys Ile Asn Ala Ala Trp Phe Lys Asn Met Pro His Leu Lys Val | 305 | 310 | 315 |
| Leu Asp Leu Glu Phe Asn Tyr Leu Val Gly Glu Ile Val Ser Gly | 320 | 325 | 330 |
| Ala Phe Leu Thr Met Leu Pro Arg Leu Glu Ile Leu Asp Leu Ser | 335 | 340 | 345 |
| Phe Asn Tyr Ile Lys Gly Ser Tyr Pro Gln His Ile Asn Ile Ser | 350 | 355 | 360 |
| Arg Asn Phe Ser Lys Leu Leu Ser Leu Arg Ala Leu His Leu Arg | 365 | 370 | 375 |
| Gly Tyr Val Phe Gln Glu Leu Arg Glu Asp Asp Phe Gln Pro Leu | 380 | 385 | 390 |
| Met Gln Leu Pro Asn Leu Ser Thr Ile Asn Leu Gly Ile Asn Phe | 395 | 400 | 405 |
| Ile Lys Gln Ile Asp Phe Lys Leu Phe Gln Asn Phe Ser Asn Leu | 410 | 415 | 420 |
| Glu Ile Ile Tyr Leu Ser Glu Asn Arg Ile Ser Pro Leu Val Lys | 425 | 430 | 435 |
| Asp Thr Arg Gln Ser Tyr Ala Asn Ser Ser Ser Phe Gln Arg His | 440 | 445 | 450 |
| Ile Arg Lys Arg Arg Ser Thr Asp Phe Glu Phe Asp Pro His Ser | 455 | 460 | 465 |
| Asn Phe Tyr His Phe Thr Arg Pro Leu Ile Lys Pro Gln Cys Ala | 470 | 475 | 480 |
| Ala Tyr Gly Lys Ala Leu Asp Leu Ser Leu Asn Ser Ile Phe Phe | 485 | 490 | 495 |
| Ile Gly Pro Asn Gln Phe Glu Asn Leu Pro Asp Ile Ala Cys Leu | 500 | 505 | 510 |
| Asn Leu Ser Ala Asn Ser Asn Ala Gln Val Leu Ser Gly Thr Glu | 515 | 520 | 525 |

|                                     |                         |     |     |     |
|-------------------------------------|-------------------------|-----|-----|-----|
| Phe Ser Ala Ile Pro His Val Lys Tyr | Leu Asp Leu Thr Asn Asn | 530 | 535 | 540 |
| Arg Leu Asp Phe Asp Asn Ala Ser Ala | Leu Thr Glu Leu Ser Asp | 545 | 550 | 555 |
| Leu Glu Val Leu Asp Leu Ser Tyr Asn | Ser His Tyr Phe Arg Ile | 560 | 565 | 570 |
| Ala Gly Val Thr His His Leu Glu Phe | Ile Gln Asn Phe Thr Asn | 575 | 580 | 585 |
| Leu Lys Val Leu Asn Leu Ser His Asn | Asn Ile Tyr Thr Leu Thr | 590 | 595 | 600 |
| Asp Lys Tyr Asn Leu Glu Ser Lys Ser | Leu Val Glu Leu Val Phe | 605 | 610 | 615 |
| Ser Gly Asn Arg Leu Asp Ile Leu Trp | Asn Asp Asp Asp Asn Arg | 620 | 625 | 630 |
| Tyr Ile Ser Ile Phe Lys Gly Leu Lys | Asn Leu Thr Arg Leu Asp | 635 | 640 | 645 |
| Leu Ser Leu Asn Arg Leu Lys His Ile | Pro Asn Glu Ala Phe Leu | 650 | 655 | 660 |
| Asn Leu Pro Ala Ser Leu Thr Glu Leu | His Ile Asn Asp Asn Met | 665 | 670 | 675 |
| Leu Lys Phe Phe Asn Trp Thr Leu Leu | Gln Gln Phe Pro Arg Leu | 680 | 685 | 690 |
| Glu Leu Leu Asp Leu Arg Gly Asn Lys | Leu Leu Phe Leu Thr Asp | 695 | 700 | 705 |
| Ser Leu Ser Asp Phe Thr Ser Ser Leu | Arg Thr Leu Leu Leu Ser | 710 | 715 | 720 |
| His Asn Arg Ile Ser His Leu Pro Ser | Gly Phe Leu Ser Glu Val | 725 | 730 | 735 |
| Ser Ser Leu Lys His Leu Asp Leu Ser | Ser Asn Leu Leu Lys Thr | 740 | 745 | 750 |
| Ile Asn Lys Ser Ala Leu Glu Thr Lys | Thr Thr Thr Lys Leu Ser | 755 | 760 | 765 |
| Met Leu Glu Leu His Gly Asn Pro Phe | Glu Cys Thr Cys Asp Ile | 770 | 775 | 780 |
| Gly Asp Phe Arg Arg Trp Met Asp Glu | His Leu Asn Val Lys Ile | 785 | 790 | 795 |
| Pro Arg Leu Val Asp Val Ile Cys Ala | Ser Pro Gly Asp Gln Arg | 800 | 805 | 810 |



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| Gly | Lys | Ser | Ile | Val | Ser | Leu | Glu | Leu | Thr | Thr | Cys | Val | Ser | Asp | 815  | 820  | 825  |
| Val | Thr | Ala | Val | Ile | Leu | Phe | Phe | Phe | Thr | Phe | Phe | Ile | Thr | Thr | 830  | 835  | 840  |
| Met | Val | Met | Leu | Ala | Ala | Leu | Ala | His | His | Leu | Phe | Tyr | Trp | Asp | 845  | 850  | 855  |
| Val | Trp | Phe | Ile | Tyr | Asn | Val | Cys | Leu | Ala | Lys | Val | Lys | Gly | Tyr | 860  | 865  | 870  |
| Arg | Ser | Leu | Ser | Thr | Ser | Gln | Thr | Phe | Tyr | Asp | Ala | Tyr | Ile | Ser | 875  | 880  | 885  |
| Tyr | Asp | Thr | Lys | Asp | Ala | Ser | Val | Thr | Asp | Trp | Val | Ile | Asn | Glu | 890  | 895  | 900  |
| Leu | Arg | Tyr | His | Leu | Glu | Glu | Ser | Arg | Asp | Lys | Asn | Val | Leu | Leu | 905  | 910  | 915  |
| Cys | Leu | Glu | Glu | Arg | Asp | Trp | Asp | Pro | Gly | Leu | Ala | Ile | Ile | Asp | 920  | 925  | 930  |
| Asn | Leu | Met | Gln | Ser | Ile | Asn | Gln | Ser | Lys | Lys | Thr | Val | Phe | Val | 935  | 940  | 945  |
| Leu | Thr | Lys | Lys | Tyr | Ala | Lys | Ser | Trp | Asn | Phe | Lys | Thr | Ala | Phe | 950  | 955  | 960  |
| Tyr | Leu | Ala | Leu | Gln | Arg | Leu | Met | Asp | Glu | Asn | Met | Asp | Val | Ile | 965  | 970  | 975  |
| Ile | Phe | Ile | Leu | Leu | Glu | Pro | Val | Leu | Gln | His | Ser | Gln | Tyr | Leu | 980  | 985  | 990  |
| Arg | Leu | Arg | Gln | Arg | Ile | Cys | Lys | Ser | Ser | Ile | Leu | Gln | Trp | Pro | 995  | 1000 | 1005 |
| Asp | Asn | Pro | Lys | Ala | Glu | Gly | Leu | Phe | Trp | Gln | Thr | Leu | Arg | Asn | 1010 | 1015 | 1020 |
| Val | Val | Leu | Thr | Glu | Asn | Asp | Ser | Arg | Tyr | Asn | Asn | Met | Tyr | Val | 1025 | 1030 | 1035 |
| Asp | Ser | Ile | Lys | Gln | Tyr |     |     |     |     |     |     |     |     |     | 1040 |      |      |

<210> 499

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 499  
taaagaccca gctgtgaccg 20

<210> 500  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 500  
atccatgagc ctctgatggg 20

<210> 501  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 501  
atttatgtct cgaggaaagg gactgggttac cagggcagcc agttc 45

<210> 502  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 502  
gccgagacaa aaacgttctc c 21

<210> 503  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 503  
catccatggt ctcattccatt agcc 24

<210> 504  
<211> 46  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 504  
tcgacaacct catgcagagc atcaacacaaa gcaagaaaac agtatt 46

<210> 505  
<211> 1738  
<212> DNA  
<213> Homo sapiens

<400> 505  
ccaggtccaa ctgcacctcg gttctatcga ttgaattccc cggggatcct 50  
ctagagatcc ctgcacctcg acccacgcgt ccgccaagct ggccctgcac 100  
ggctgcaagg gaggctcctg tggacaggcc aggcagggtg gcctcaggag 150  
gtgcctccag gcggccagtg ggccctgaggc ccagcaagg gctagggtcc 200  
atctccagtc ccaggacaca gcagcggcca ccatggccac gcctgggctc 250  
cagcagcatc agcagccccc aggaccgggg aggcacaggt gggccccacc 300  
acccggagga gcagctcctg cccctgtccg ggggatgact gattctcctc 350  
cgccaggcca ccagaggag aaggccaccc cgctggagg cacaggccat 400  
gaggggctct caggagggtg tgctgatgtg gcttctggtg ttggcagtgg 450  
gcggcacaga gcacgcctac cggcccggcc gtagggtgtg tgctgtccgg 500  
gctcacgggg accctgtctc cgagtogttc gtgcagcgtg tgtaccagcc 550  
cttcctcacc acctgcgacg ggcaccgggc ctgcagcacc taccgaacca 600  
tctataggac cgcctaccgc cgcagccctg ggctggcccc tgccaggcct 650  
cgctacgcgt gctgccccgg ctggaagagg accagcgggc ttctgggggc 700  
ctgtggagca gcaatatgcc agccgccatg ccggaacgga gggagctgtg 750  
tccagcctgg ccgctgccgc tgccctgcag gatggcgggg tgacacttgc 800  
cagtcagatg tggatgaatg cagtgtcagg aggggcggct gtccccagcg 850  
ctgcatcaac accgccggca gttactggtg ccagtgttg gaggggcaca 900  
gcctgtctgc agacgtaca ctctgtgtgc ccaagggagg gccccccagg 950  
gtggccccca acccgacagg agtggacagt gcaatgaagg aagaagtgca 1000  
gaggctgcag tccagggtgg acctgtgga ggagaagctg cagctggtgc 1050  
tgggccccact gcacagcctg gcctgcagg cactggagca tgggctcccg 1100  
gaccccgcca gctcctggt gcactccttc cagcagctcg gccgcatcga 1150  
ctccctgagc gagcagattt ccttcctgga ggagcagctg gggctcctgct 1200  
cctgcaagaa agactcgtga ctgccagcg cccaggtg gactgagccc 1250

ctcacgccgc cctgcagccc ccatgccctt gcccaacatg ctgggggtcc 1300  
agaagccacc tcggggtgac tgagcggaag gccaggcagg gccttcctcc 1350  
tcttcctcct ccccttcctc gggagggtcc ccagaccctg gcatgggatg 1400  
ggctgggatc ttctctgtga atccaccctt ggctaccccc accctggcta 1450  
ccccaacggc atcccaaggc caggtgggcc ctgagctgag ggaaggtacg 1500  
agctccctgc tggagcctgg gacccatggc acaggccagg cagcccggag 1550  
gctgggtggg gcctcagtgg gggctgctgc ctgaccccca gcacaataaa 1600  
aatgaaacgt gaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1650  
aaagggcggc cgcgactcta gagtcgacct gcagaagctt ggccgccatg 1700  
gccaacttg ttattgcag cttataatgg ttacaaat 1738

<210> 506

<211> 273

<212> PRT

<213> Homo sapiens

<400> 506

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Arg | Gly | Ser | Gln | Glu | Val | Leu | Leu | Met | Trp | Leu | Leu | Val | Leu | 1   | 5   | 10  | 15 |
| Ala | Val | Gly | Gly | Thr | Glu | His | Ala | Tyr | Arg | Pro | Gly | Arg | Arg | Val | 20  | 25  | 30  |    |
| Cys | Ala | Val | Arg | Ala | His | Gly | Asp | Pro | Val | Ser | Glu | Ser | Phe | Val | 35  | 40  | 45  |    |
| Gln | Arg | Val | Tyr | Gln | Pro | Phe | Leu | Thr | Thr | Cys | Asp | Gly | His | Arg | 50  | 55  | 60  |    |
| Ala | Cys | Ser | Thr | Tyr | Arg | Thr | Ile | Tyr | Arg | Thr | Ala | Tyr | Arg | Arg | 65  | 70  | 75  |    |
| Ser | Pro | Gly | Leu | Ala | Pro | Ala | Arg | Pro | Arg | Tyr | Ala | Cys | Cys | Pro | 80  | 85  | 90  |    |
| Gly | Trp | Lys | Arg | Thr | Ser | Gly | Leu | Pro | Gly | Ala | Cys | Gly | Ala | Ala | 95  | 100 | 105 |    |
| Ile | Cys | Gln | Pro | Pro | Cys | Arg | Asn | Gly | Gly | Ser | Cys | Val | Gln | Pro | 110 | 115 | 120 |    |
| Gly | Arg | Cys | Arg | Cys | Pro | Ala | Gly | Trp | Arg | Gly | Asp | Thr | Cys | Gln | 125 | 130 | 135 |    |
| Ser | Asp | Val | Asp | Glu | Cys | Ser | Ala | Arg | Arg | Gly | Gly | Cys | Pro | Gln | 140 | 145 | 150 |    |
| Arg | Cys | Ile | Asn | Thr | Ala | Gly | Ser | Tyr | Trp | Cys | Gln | Cys | Trp | Glu |     |     |     |    |

|   |     |     |     |
|---|-----|-----|-----|
|   | 155 | 160 | 165 |
| Gly His Ser Leu Ser Ala Asp Gly Thr Leu Cys Val Pro Lys Gly |     |     |     |
|   | 170 | 175 | 180 |
| Gly Pro Pro Arg Val Ala Pro Asn Pro Thr Gly Val Asp Ser Ala |     |     |     |
|   | 185 | 190 | 195 |
| Met Lys Glu Glu Val Gln Arg Leu Gln Ser Arg Val Asp Leu Leu |     |     |     |
|   | 200 | 205 | 210 |
| Glu Glu Lys Leu Gln Leu Val Leu Ala Pro Leu His Ser Leu Ala |     |     |     |
|   | 215 | 220 | 225 |
| Ser Gln Ala Leu Glu His Gly Leu Pro Asp Pro Gly Ser Leu Leu |     |     |     |
|   | 230 | 235 | 240 |
| Val His Ser Phe Gln Gln Leu Gly Arg Ile Asp Ser Leu Ser Glu |     |     |     |
|   | 245 | 250 | 255 |
| Gln Ile Ser Phe Leu Glu Glu Gln Leu Gly Ser Cys Ser Cys Lys |     |     |     |
|   | 260 | 265 | 270 |

Lys Asp Ser

<210> 507  
 <211> 1700  
 <212> DNA  
 <213> Homo sapiens

<400> 507  
 gccaggcagg tgggcctcag gaggtgcctc caggcggcca gtgggcctga 50  
 ggccccagca agggctaggg tccatctcca gtcccaggac acagcagcgg 100  
 ccaccatggc cacgcctggg ctccagcagc atcagagcag cccctgtggt 150  
 tggcagcaaa gttcagcttg gctgggcccc ctgtgagggg cttcgcgcta 200  
 cgccctgcgg tgtcccagag gctgaggtct cctcatcttc tccctagcag 250  
 tggatgagca acccaacggg ggcccgggga ggggaactgg ccccgaggga 300  
 gaggaacccc aaagccacat ctgtagccag gatgagcagt gtgaatccag 350  
 gcagccccca ggaccgggga ggcacaggtg gccccacca cccggaggag 400  
 cagctcctgc cctgtccgg gggatgactg attctcctcc gccaggccac 450  
 ccagaggaga aggccacccc gcctggaggc acaggccatg aggggctctc 500  
 aggaggtgct gctgatgtgg cttctggtgt tggcagtggg cggcacagag 550  
 cacgcctacc ggcccggccg tagggtgtgt gctgtccggg ctacggggga 600  
 ccctgtctcc gagtcgttcg tgcagcgtgt gtaccagccc ttcctacca 650

cctgcgacgg gcaccgggcc tgcagcacct accgaaccat ctataggacc 700  
 gcctaccgcc gcagccctgg gctggcccct gccaggcctc gctacgcgtg 750  
 ctgccccggc tggaagagga ccagcgggct tcctggggcc tgtggagcag 800  
 caatatgcca gccgccatgc cggaacggag ggagctgtgt ccagcctggc 850  
 cgctgccgct gccctgcagg atggcggggt gacacttgcc agtcagatgt 900  
 ggatgaatgc agtgctagga ggggcggctg tccccagcgc tgcatacaaca 950  
 ccgcgggcag ttactggtgc cagtgttggg aggggcacag cctgtctgca 1000  
 gacggtacac tctgtgtgcc caagggaggg cccccaggg tggcccccaa 1050  
 cccgacagga gtggacagtgc caatgaagga agaagtgcag aggctgcagt 1100  
 ccagggtgga cctgctggag gagaagctgc agctggtgct ggccccactg 1150  
 cacagcctgg cctcgcaggc actggagcat gggctcccg accccggcag 1200  
 cctcctggtg cactccttcc agcagctcgg ccgcatcgac tccctgagcg 1250  
 agcagatttc cttcctggag gagcagctgg ggtcctgctc ctgcaagaaa 1300  
 gactcgtgac tgcccagcgc tccaggctgg actgagcccc tcacgccgcc 1350  
 ctgcagcccc catgcccctg cccaacatgc tgggggtcca gaagccacct 1400  
 cggggtgact gagcgggaagg ccaggcaggg ccttcctcct cttcctcctc 1450  
 cccttcctcg ggaggctccc cagaccctgg catgggatgg gctgggatct 1500  
 tctctgtgaa tccaccctg gctaccccca cctgggtac cccaacggca 1550  
 tccaaggcc aggtggaccc tcagctgagg gaaggtacga gctccctgct 1600  
 ggagcctggg acccatggca caggccaggc agcccgagg ctgggtgggg 1650  
 cctcagtggg ggctgctgcc tgacccccag cacaataaaa atgaaacgtg 1700

<210> 508

<211> 273

<212> PRT

<213> Homo sapiens

<400> 508

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Gly | Ser | Gln | Glu | Val | Leu | Leu | Met | Trp | Leu | Leu | Val | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Val | Gly | Gly | Thr | Glu | His | Ala | Tyr | Arg | Pro | Gly | Arg | Arg | Val |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Ala | Val | Arg | Ala | His | Gly | Asp | Pro | Val | Ser | Glu | Ser | Phe | Val |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |

Gln Arg Val Tyr Gln Pro Phe Leu Thr Thr Cys Asp Gly His Arg  
 50 55 60  
 Ala Cys Ser Thr Tyr Arg Thr Ile Tyr Arg Thr Ala Tyr Arg Arg  
 65 70 75  
 Ser Pro Gly Leu Ala Pro Ala Arg Pro Arg Tyr Ala Cys Cys Pro  
 80 85 90  
 Gly Trp Lys Arg Thr Ser Gly Leu Pro Gly Ala Cys Gly Ala Ala  
 95 100 105  
 Ile Cys Gln Pro Pro Cys Arg Asn Gly Gly Ser Cys Val Gln Pro  
 110 115 120  
 Gly Arg Cys Arg Cys Pro Ala Gly Trp Arg Gly Asp Thr Cys Gln  
 125 130 135  
 Ser Asp Val Asp Glu Cys Ser Ala Arg Arg Gly Gly Cys Pro Gln  
 140 145 150  
 Arg Cys Ile Asn Thr Ala Gly Ser Tyr Trp Cys Gln Cys Trp Glu  
 155 160 165  
 Gly His Ser Leu Ser Ala Asp Gly Thr Leu Cys Val Pro Lys Gly  
 170 175 180  
 Gly Pro Pro Arg Val Ala Pro Asn Pro Thr Gly Val Asp Ser Ala  
 185 190 195  
 Met Lys Glu Glu Val Gln Arg Leu Gln Ser Arg Val Asp Leu Leu  
 200 205 210  
 Glu Glu Lys Leu Gln Leu Val Leu Ala Pro Leu His Ser Leu Ala  
 215 220 225  
 Ser Gln Ala Leu Glu His Gly Leu Pro Asp Pro Gly Ser Leu Leu  
 230 235 240  
 Val His Ser Phe Gln Gln Leu Gly Arg Ile Asp Ser Leu Ser Glu  
 245 250 255  
 Gln Ile Ser Phe Leu Glu Glu Gln Leu Gly Ser Cys Ser Cys Lys  
 260 265 270  
 Lys Asp Ser

<210> 509  
 <211> 1538  
 <212> DNA  
 <213> Homo sapiens

<400> 509  
 cccacgcgtc cgaagctggc cctgcacggc tgcaaggag gctcctgtgg 50

acaggccagg caggtgggcc tcaggaggtg cctccaggcg gccagtgggc 100  
ctgaggcccc agcaagggtt aggggtccatc tccagtccca ggacacagca 150  
gcgggcacca tggccacgcc tgggtccag cagcatcagc agccccagg 200  
accggggagg cacaggtggc cccaccacc cggaggagca gtcctgccc 250  
ctgtccgggg gatgactgat tctcctccgc caggccacc agaggagaag 300  
gccacccgc ctggaggcac aggccatgag gggctctcag gaggtgctgc 350  
tgatgtgggt tctggtgttg gcagtgggcg gcacagagca cgcctaccgg 400  
cccggccgta ggggtgtgtg tgtccgggt cagggggacc ctgtctccga 450  
gtcgttcgtg cagcgtgtgt accagccctt cctcaccacc tgcgacgggc 500  
accgggcctg cagcacctac cgaaccatct ataggaccgc ctaccgccgc 550  
agccctgggc tggcccctgc caggcctcgc tacgctgct gccccggctg 600  
gaagaggacc agcgggcttc ctggggcctg tggagcagca atatgccagc 650  
cgccatgccg gaacggaggg agctgtgtcc agcctggccg ctgccgctgc 700  
cctgcaggat ggcggggtga cacttgccag tcagatgtgg atgaatgcag 750  
tgctaggagg ggcggctgtc cccagcgtg cgtcaacacc gccggcagtt 800  
actggtgccg gtgttgggag gggcacagcc tgtctgcaga cggtagactc 850  
tgtgtgcccc agggagggcc cccagggtg gcccccaacc cgacaggagt 900  
ggacagtgca atgaaggaag aagtgcagag gctgcagtcc aggggtggacc 950  
tgctggagga gaagctgcag ctggtgctgg cccactgca cagcctggcc 1000  
tcgcaggcac tggagcatgg gctcccggac ccgggcagcc tcctggtgca 1050  
ctccttccag cagctcggcc gcctcgactc cctgagcgag cagatttcct 1100  
tcctggagga gcagctggg tcctgctcct gcaagaaaga ctctgactg 1150  
cccagcggcc caggctggac tgagccctc acgcccct gcagcccca 1200  
tgcccctgcc caacatgctg ggggtccaga agccacctg gggtagctga 1250  
gcggaaggcc aggcagggcc ttctctctct tctctctccc ctctctggg 1300  
aggctcccc gaccctggca tgggatggg tgggatcttc tctgtgaatc 1350  
caccctggc taccaccacc ctggctaccc caacggcatc ccaaggccag 1400  
gtgggcccctc agctgagga aggtacgagc tccctgctgg agcctgggac 1450  
ccatggcaca ggccaggcag cccggaggct ggggtggggc tcagtggggg 1500



ctgctgcctg acccccagca caataaaaat gaaacgtg 1538

<210> 510

<211> 273

<212> PRT

<213> Homo sapiens

<400> 510

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Arg | Gly | Ser | Gln | Glu | Val | Leu | Leu | Met | Trp | Leu | Leu | Val | Leu |  |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |  |
| Ala | Val | Gly | Gly | Thr | Glu | His | Ala | Tyr | Arg | Pro | Gly | Arg | Arg | Val |  |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |  |
| Cys | Ala | Val | Arg | Ala | His | Gly | Asp | Pro | Val | Ser | Glu | Ser | Phe | Val |  |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |  |
| Gln | Arg | Val | Tyr | Gln | Pro | Phe | Leu | Thr | Thr | Cys | Asp | Gly | His | Arg |  |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |  |
| Ala | Cys | Ser | Thr | Tyr | Arg | Thr | Ile | Tyr | Arg | Thr | Ala | Tyr | Arg | Arg |  |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |  |
| Ser | Pro | Gly | Leu | Ala | Pro | Ala | Arg | Pro | Arg | Tyr | Ala | Cys | Cys | Pro |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |  |
| Gly | Trp | Lys | Arg | Thr | Ser | Gly | Leu | Pro | Gly | Ala | Cys | Gly | Ala | Ala |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |  |
| Ile | Cys | Gln | Pro | Pro | Cys | Arg | Asn | Gly | Gly | Ser | Cys | Val | Gln | Pro |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |  |
| Gly | Arg | Cys | Arg | Cys | Pro | Ala | Gly | Trp | Arg | Gly | Asp | Thr | Cys | Gln |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |
| Ser | Asp | Val | Asp | Glu | Cys | Ser | Ala | Arg | Arg | Gly | Gly | Cys | Pro | Gln |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |
| Arg | Cys | Val | Asn | Thr | Ala | Gly | Ser | Tyr | Trp | Cys | Gln | Cys | Trp | Glu |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |
| Gly | His | Ser | Leu | Ser | Ala | Asp | Gly | Thr | Leu | Cys | Val | Pro | Lys | Gly |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |
| Gly | Pro | Pro | Arg | Val | Ala | Pro | Asn | Pro | Thr | Gly | Val | Asp | Ser | Ala |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |
| Met | Lys | Glu | Glu | Val | Gln | Arg | Leu | Gln | Ser | Arg | Val | Asp | Leu | Leu |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| Glu | Glu | Lys | Leu | Gln | Leu | Val | Leu | Ala | Pro | Leu | His | Ser | Leu | Ala |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| Ser | Gln | Ala | Leu | Glu | His | Gly | Leu | Pro | Asp | Pro | Gly | Ser | Leu | Leu |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |

Val His Ser Phe Gln Gln Leu Gly Arg Ile Asp Ser Leu Ser Glu  
245 250 255

Gln Ile Ser Phe Leu Glu Glu Gln Leu Gly Ser Cys Ser Cys Lys  
260 265 270

Lys Asp Ser

<210> 511

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 511

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<210> 512

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 512

ttttccactc ctgtcgggtt gg 22

<210> 513

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 513

ggtgacactt gccagtcaga tgtggatgaa tgcagtgcta ggaggg 46

<210> 514

<211> 2690

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 2039-2065

<223> unknown base

<400> 514

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ggagacagcc tccccgccccg gggaggacaa gtcgctgcc cctttggctg 100

ccgacgtgat tccctgggac ggtccgtttc ctgccgtcag ctgccggccg 150  
agttgggtct ccgtgtttca ggccggctcc cccttcctgg tctcccttct 200  
cccgtgggc cggtttatcg ggaggagatt gtcttccagg gctagcaatt 250  
ggacttttga tgatgtttga cccagcggca ggaatagcag gcaacgtgat 300  
ttcaaagctg ggctcagcct ctgtttcttc tctcgtgtaa tcgcaaaacc 350  
cattttggag caggaattcc aatcatgtct gtgatggtgg tgagaaagaa 400  
ggtgacacgg aaatgggaga aactcccagg caggaacacc ttttgctgtg 450  
atggccgcgt catgatggcc cggcaaaagg gcattttcta cctgaccctt 500  
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atggcaatat tgtgaagaac tgctgtgaag tgctgtgtgg cccttgccc 1250  
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<210> 515  
 <211> 364  
 <212> PRT  
 <213> Homo sapiens

<400> 515  
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 1 5 10 15  
 Lys Leu Pro Gly Arg Asn Thr Phe Cys Cys Asp Gly Arg Val Met

| 20   | 25  | 30  |
|--|-----|-----|
| Met Ala Arg Gln Lys Gly Ile Phe Tyr Leu Thr Leu Phe Leu Ile<br>35  | 40  | 45  |
| Leu Gly Thr Cys Thr Leu Phe Phe Ala Phe Glu Cys Arg Tyr Leu<br>50  | 55  | 60  |
| Ala Val Gln Leu Ser Pro Ala Ile Pro Val Phe Ala Ala Met Leu<br>65  | 70  | 75  |
| Phe Leu Phe Ser Met Ala Thr Leu Leu Arg Thr Ser Phe Ser Asp<br>80  | 85  | 90  |
| Pro Gly Val Ile Pro Arg Ala Leu Pro Asp Glu Ala Ala Phe Ile<br>95  | 100 | 105 |
| Glu Met Glu Ile Glu Ala Thr Asn Gly Ala Val Pro Gln Gly Gln<br>110 | 115 | 120 |
| Arg Pro Pro Pro Arg Ile Lys Asn Phe Gln Ile Asn Asn Gln Ile<br>125 | 130 | 135 |
| Val Lys Leu Lys Tyr Cys Tyr Thr Cys Lys Ile Phe Arg Pro Pro<br>140 | 145 | 150 |
| Arg Ala Ser His Cys Ser Ile Cys Asp Asn Cys Val Glu Arg Phe<br>155 | 160 | 165 |
| Asp His His Cys Pro Trp Val Gly Asn Cys Val Gly Lys Arg Asn<br>170 | 175 | 180 |
| Tyr Arg Tyr Phe Tyr Leu Phe Ile Leu Ser Leu Ser Leu Leu Thr<br>185 | 190 | 195 |
| Ile Tyr Val Phe Ala Phe Asn Ile Val Tyr Val Ala Leu Lys Ser<br>200 | 205 | 210 |
| Leu Lys Ile Gly Phe Leu Glu Thr Leu Lys Glu Thr Pro Gly Thr<br>215 | 220 | 225 |
| Val Leu Glu Val Leu Ile Cys Phe Phe Thr Leu Trp Ser Val Val<br>230 | 235 | 240 |
| Gly Leu Thr Gly Phe His Thr Phe Leu Val Ala Leu Asn Gln Thr<br>245 | 250 | 255 |
| Thr Asn Glu Asp Ile Lys Gly Ser Trp Thr Gly Lys Asn Arg Val<br>260 | 265 | 270 |
| Gln Asn Pro Tyr Ser His Gly Asn Ile Val Lys Asn Cys Cys Glu<br>275 | 280 | 285 |
| Val Leu Cys Gly Pro Leu Pro Pro Ser Val Leu Asp Arg Arg Gly<br>290 | 295 | 300 |
| Ile Leu Pro Leu Glu Glu Ser Gly Ser Arg Pro Pro Ser Thr Gln        |     |     |

|                                     |                         |     |
|-------------------------------------|-------------------------|-----|
| 305                                 | 310                     | 315 |
| Glu Thr Ser Ser Ser Leu Leu Pro Gln | Ser Pro Ala Pro Thr Glu |     |
| 320                                 | 325                     | 330 |
| His Leu Asn Ser Asn Glu Met Pro Glu | Asp Ser Ser Thr Pro Glu |     |
| 335                                 | 340                     | 345 |
| Glu Met Pro Pro Pro Glu Pro Pro Glu | Pro Pro Gln Glu Ala Ala |     |
| 350                                 | 355                     | 360 |

Glu Ala Glu Lys

<210> 516

<211> 255

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 36, 38, 88, 118, 135, 193, 213, 222

<223> unknown base

<400> 516

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tgaattaggt attataggga tgggtggggtt gatttttntt cctggaggct 100

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cccctgggtg gggaattgtg ttggaaagag gaactaccgc tanttctacc 200

tcttcacact ttntctctcc cncctcacia tctatgtctt cgccttcaac 250

atcgt 255

<210> 517

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 517

caacgtgatt tcaaagctgg gctc 24

<210> 518

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 518

gcctcgtatc aagaatttcc 20

<210> 519  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 519  
 agtggaagtc gacctccc 18

<210> 520  
 <211> 24  
 <212> DNA  
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<220>  
 <223> Synthetic oligonucleotide probe

<400> 520  
 ctcacctgaa atctctcata gcc 24

<210> 521  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 521  
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<210> 522  
 <211> 1679  
 <212> DNA  
 <213> Homo sapiens

<400> 522  
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 agagcaacac aatctatcag gaaagaaaga aagaaaaaaa ccgaacctga 100  
 caaaaaagaa gaaaaagaag aagaaaaaaa atcatgaaaa ccatccagcc 150  
 aaaaatgcac aattctatct cttgggcaat cttcacgggg ctggctgctc 200  
 tgtgtctctt ccaaggagtg cccgtgcgca gcggagatgc caccttcccc 250  
 aaagctatgg acaacgtgac ggtccggcag ggggagagcg ccaccctcag 300  
 gtgcactatt gacaaccggg tcaccgggt ggctggcta aaccgcagca 350  
 ccatactcta tgctgggaat gacaagtgg gcctggatcc tcgcgtggtc 400

cttctgagca acacccaaac gcagtacagc atcgagatcc agaacgtgga 450  
 tgtgtatgac gagggccctt acacctgctc ggtgcagaca gacaaccacc 500  
 caaagacctc taggggtccac ctcatgtgac aagtatctcc caaaattgta 550  
 gagatttctt cagatatctc cattaatgaa gggaacaata ttagcctcac 600  
 ctgcatagca actggtagac cagagcctac ggttacttgg agacacatct 650  
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 catacatttc agaagccaag ggtacaggtg tccccgtggg acaaaagggg 850  
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 caaggatgac aaaagactga ttgaaggaaa gaaaggggtg aaagtggaaa 950  
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 gccgccacca ccaccacca cacaacagca atggcaacac cgacagcaac 1250  
 caatcagata tatacaaatg aaattagaag aaacacagcc tcatgggaca 1300  
 gaaatttgag ggaggggaac aaagaatact ttggggggaa aagagtttta 1350  
 aaaaagaaat tgaaaattgc cttgcagata tttaggtaca atggagtttt 1400  
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 aattcaatca gtccatagag acgaacagaa tgagaccttc cggccaagc 1600  
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<210> 523

<211> 344

<212> PRT

<213> Homo sapiens



<400> 523

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Lys | Thr | Ile | Gln | Pro | Lys | Met | His | Asn | Ser | Ile | Ser | Trp | Ala |  |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |  |
| Ile | Phe | Thr | Gly | Leu | Ala | Ala | Leu | Cys | Leu | Phe | Gln | Gly | Val | Pro |  |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |  |
| Val | Arg | Ser | Gly | Asp | Ala | Thr | Phe | Pro | Lys | Ala | Met | Asp | Asn | Val |  |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |  |
| Thr | Val | Arg | Gln | Gly | Glu | Ser | Ala | Thr | Leu | Arg | Cys | Thr | Ile | Asp |  |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |  |
| Asn | Arg | Val | Thr | Arg | Val | Ala | Trp | Leu | Asn | Arg | Ser | Thr | Ile | Leu |  |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |  |
| Tyr | Ala | Gly | Asn | Asp | Lys | Trp | Cys | Leu | Asp | Pro | Arg | Val | Val | Leu |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |  |
| Leu | Ser | Asn | Thr | Gln | Thr | Gln | Tyr | Ser | Ile | Glu | Ile | Gln | Asn | Val |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |  |
| Asp | Val | Tyr | Asp | Glu | Gly | Pro | Tyr | Thr | Cys | Ser | Val | Gln | Thr | Asp |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |  |
| Asn | His | Pro | Lys | Thr | Ser | Arg | Val | His | Leu | Ile | Val | Gln | Val | Ser |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |
| Pro | Lys | Ile | Val | Glu | Ile | Ser | Ser | Asp | Ile | Ser | Ile | Asn | Glu | Gly |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |
| Asn | Asn | Ile | Ser | Leu | Thr | Cys | Ile | Ala | Thr | Gly | Arg | Pro | Glu | Pro |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |
| Thr | Val | Thr | Trp | Arg | His | Ile | Ser | Pro | Lys | Ala | Val | Gly | Phe | Val |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |
| Ser | Glu | Asp | Glu | Tyr | Leu | Glu | Ile | Gln | Gly | Ile | Thr | Arg | Glu | Gln |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |
| Ser | Gly | Asp | Tyr | Glu | Cys | Ser | Ala | Ser | Asn | Asp | Val | Ala | Ala | Pro |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| Val | Val | Arg | Arg | Val | Lys | Val | Thr | Val | Asn | Tyr | Pro | Pro | Tyr | Ile |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| Ser | Glu | Ala | Lys | Gly | Thr | Gly | Val | Pro | Val | Gly | Gln | Lys | Gly | Thr |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Leu | Gln | Cys | Glu | Ala | Ser | Ala | Val | Pro | Ser | Ala | Glu | Phe | Gln | Trp |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |
| Tyr | Lys | Asp | Asp | Lys | Arg | Leu | Ile | Glu | Gly | Lys | Lys | Gly | Val | Lys |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |
| Val | Glu | Asn | Arg | Pro | Phe | Leu | Ser | Lys | Leu | Ile | Phe | Phe | Asn | Val |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |

Ser Glu His Asp Tyr Gly Asn Tyr Thr Cys Val Ala Ser Asn Lys  
290 295 300

Leu Gly His Thr Asn Ala Ser Ile Met Leu Phe Gly Pro Gly Ala  
305 310 315

Val Ser Glu Val Ser Asn Gly Thr Ser Arg Arg Ala Gly Cys Val  
320 325 330

Trp Leu Leu Pro Leu Leu Val Leu His Leu Leu Leu Lys Phe  
335 340

<210> 524

<211> 503

<212> DNA

<213> Homo sapiens

<400> 524

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cgtgcgagc ggagatgcca ccttcccca agctatggac aacgtgacgg 150  
tccggcaggg ggagagcgcc accctcaggt gcactattga caaccgggtc 200  
accgggtgg cctggctaaa ccgcagcacc atcctctatg ctgggaatga 250  
caagtgggtgc ctggatcctc gcgtgggtcct tctgagcaac acccaaacgc 300  
agtacagcat cgagatccag aacgtggatg tgtatgacga gggcccttac 350  
acctgctcgg tgcagacaga caaccaccca aagacctcta gggtcacact 400  
cattgtgcaa gtatctccca aaattgtaga gatttcttca gatatctcca 450  
ttaatgaagg gaacaatatt agcctcacct gcatagcaac tggtagacca 500  
gag 503

<210> 525

<211> 2602

<212> DNA

<213> Homo sapiens

<400> 525

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tgaacgtcgc gctgcaggag ctgggagctg gcagcaacgt gggattccag 150  
aaggggacaa gacagctgtt aggetcacgc acgcagctgg agctgggtctt 200  
agcaggtgcc tctctactgc tggctgcact gcttctgggc tgccttgtgg 250

ccctaggggt ccagtaccac agagacccat cccacagcac ctgccttaca 300  
gaggcctgca ttcgagtggc tggaaaaatc ctggagtccc tggaccgagg 350  
ggtgagcccc tgtgaggact tttaccagtt ctctgtggg ggctggattc 400  
ggaggaaccc cctgcccgat gggcgttctc gctggaacac cttcaacagc 450  
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cttcaactcc agcagtgaag ctgagcagaa gacacagcgc ttctacctat 550  
cttgcctaca ggtggagcgc attgaggagc tgggagccca gccactgaga 600  
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ggacaacttt atggagggtg tgaaggcagt agcagggacc tacagggccca 700  
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acaacctcaa gcctggaccg acgctttgag tctgcacaag agaagctgct 1250  
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<400> 526

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Gln | Lys | Gly | Thr | Arg | Gln | Leu | Leu | Gly | Ser | Arg | Thr | Gln | Leu |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Leu | Val | Leu | Ala | Gly | Ala | Ser | Leu | Leu | Leu | Ala | Ala | Leu | Leu |
|     |     |     |     | 35  |     |     |     | 40  |     |     |     |     |     | 45  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Gly | Cys | Leu | Val | Ala | Leu | Gly | Val | Gln | Tyr | His | Arg | Asp | Pro |
|     |     |     |     | 50  |     |     |     | 55  |     |     |     |     |     | 60  |

|   |     |     |     |
|---|-----|-----|-----|
| Ser His Ser Thr Cys Leu Thr Glu Ala Cys Ile Arg Val Ala Gly | 65  | 70  | 75  |
| Lys Ile Leu Glu Ser Leu Asp Arg Gly Val Ser Pro Cys Glu Asp | 80  | 85  | 90  |
| Phe Tyr Gln Phe Ser Cys Gly Gly Trp Ile Arg Arg Asn Pro Leu | 95  | 100 | 105 |
| Pro Asp Gly Arg Ser Arg Trp Asn Thr Phe Asn Ser Leu Trp Asp | 110 | 115 | 120 |
| Gln Asn Gln Ala Ile Leu Lys His Leu Leu Glu Asn Thr Thr Phe | 125 | 130 | 135 |
| Asn Ser Ser Ser Glu Ala Glu Gln Lys Thr Gln Arg Phe Tyr Leu | 140 | 145 | 150 |
| Ser Cys Leu Gln Val Glu Arg Ile Glu Glu Leu Gly Ala Gln Pro | 155 | 160 | 165 |
| Leu Arg Asp Leu Ile Glu Lys Ile Gly Gly Trp Asn Ile Thr Gly | 170 | 175 | 180 |
| Pro Trp Asp Gln Asp Asn Phe Met Glu Val Leu Lys Ala Val Ala | 185 | 190 | 195 |
| Gly Thr Tyr Arg Ala Thr Pro Phe Phe Thr Val Tyr Ile Ser Ala | 200 | 205 | 210 |
| Asp Ser Lys Ser Ser Asn Ser Asn Val Ile Gln Val Asp Gln Ser | 215 | 220 | 225 |
| Gly Leu Phe Leu Pro Ser Arg Asp Tyr Tyr Leu Asn Arg Thr Ala | 230 | 235 | 240 |
| Asn Glu Lys Val Leu Thr Ala Tyr Leu Asp Tyr Met Glu Glu Leu | 245 | 250 | 255 |
| Gly Met Leu Leu Gly Gly Arg Pro Thr Ser Thr Arg Glu Gln Met | 260 | 265 | 270 |
| Gln Gln Val Leu Glu Leu Glu Ile Gln Leu Ala Asn Ile Thr Val | 275 | 280 | 285 |
| Pro Gln Asp Gln Arg Arg Asp Glu Glu Lys Ile Tyr His Lys Met | 290 | 295 | 300 |
| Ser Ile Ser Glu Leu Gln Ala Leu Ala Pro Ser Met Asp Trp Leu | 305 | 310 | 315 |
| Glu Phe Leu Ser Phe Leu Leu Ser Pro Leu Glu Leu Ser Asp Ser | 320 | 325 | 330 |
| Glu Pro Val Val Val Tyr Gly Met Asp Tyr Leu Gln Gln Val Ser | 335 | 340 | 345 |

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Leu | Ile | Asn | Arg | Thr | Glu | Pro | Ser | Ile | Leu | Asn | Asn | Tyr | Leu | 350 | 355 | 360 |
| Ile | Trp | Asn | Leu | Val | Gln | Lys | Thr | Thr | Ser | Ser | Leu | Asp | Arg | Arg | 365 | 370 | 375 |
| Phe | Glu | Ser | Ala | Gln | Glu | Lys | Leu | Leu | Glu | Thr | Leu | Tyr | Gly | Thr | 380 | 385 | 390 |
| Lys | Lys | Ser | Cys | Val | Pro | Arg | Trp | Gln | Thr | Cys | Ile | Ser | Asn | Thr | 395 | 400 | 405 |
| Asp | Asp | Ala | Leu | Gly | Phe | Ala | Leu | Gly | Ser | Leu | Phe | Val | Lys | Ala | 410 | 415 | 420 |
| Thr | Phe | Asp | Arg | Gln | Ser | Lys | Glu | Ile | Ala | Glu | Gly | Met | Ile | Ser | 425 | 430 | 435 |
| Glu | Ile | Arg | Thr | Ala | Phe | Glu | Glu | Ala | Leu | Gly | Gln | Leu | Val | Trp | 440 | 445 | 450 |
| Met | Asp | Glu | Lys | Thr | Arg | Gln | Ala | Ala | Lys | Glu | Lys | Ala | Asp | Ala | 455 | 460 | 465 |
| Ile | Tyr | Asp | Met | Ile | Gly | Phe | Pro | Asp | Phe | Ile | Leu | Glu | Pro | Lys | 470 | 475 | 480 |
| Glu | Leu | Asp | Asp | Val | Tyr | Asp | Gly | Tyr | Glu | Ile | Ser | Glu | Asp | Ser | 485 | 490 | 495 |
| Phe | Phe | Gln | Asn | Met | Leu | Asn | Leu | Tyr | Asn | Phe | Ser | Ala | Lys | Val | 500 | 505 | 510 |
| Met | Ala | Asp | Gln | Leu | Arg | Lys | Pro | Pro | Ser | Arg | Asp | Gln | Trp | Ser | 515 | 520 | 525 |
| Met | Thr | Pro | Gln | Thr | Val | Asn | Ala | Tyr | Tyr | Leu | Pro | Thr | Lys | Asn | 530 | 535 | 540 |
| Glu | Ile | Val | Phe | Pro | Ala | Gly | Ile | Leu | Gln | Ala | Pro | Phe | Tyr | Ala | 545 | 550 | 555 |
| Arg | Asn | His | Pro | Lys | Ala | Leu | Asn | Phe | Gly | Gly | Ile | Gly | Val | Val | 560 | 565 | 570 |
| Met | Gly | His | Glu | Leu | Thr | His | Ala | Phe | Asp | Asp | Gln | Gly | Arg | Glu | 575 | 580 | 585 |
| Tyr | Asp | Lys | Glu | Gly | Asn | Leu | Arg | Pro | Trp | Trp | Gln | Asn | Glu | Ser | 590 | 595 | 600 |
| Leu | Ala | Ala | Phe | Arg | Asn | His | Thr | Ala | Cys | Met | Glu | Glu | Gln | Tyr | 605 | 610 | 615 |
| Asn | Gln | Tyr | Gln | Val | Asn | Gly | Glu | Arg | Leu | Asn | Gly | Arg | Gln | Thr | 620 | 625 | 630 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Gly | Glu | Asn | Ile | Thr | Asp | Asn | Gly | Gly | Leu | Lys | Ala | Ala | Tyr | 635 | 640 | 645 |
| Asn | Ala | Tyr | Lys | Ala | Trp | Leu | Arg | Lys | His | Gly | Glu | Glu | Gln | Gln | 650 | 655 | 660 |
| Leu | Pro | Ala | Val | Gly | Leu | Thr | Asn | His | Gln | Leu | Phe | Phe | Val | Gly | 665 | 670 | 675 |
| Phe | Ala | Gln | Val | Trp | Cys | Ser | Val | Arg | Thr | Pro | Glu | Ser | Ser | His | 680 | 685 | 690 |
| Glu | Gly | Leu | Val | Thr | Asp | Pro | His | Ser | Pro | Ala | Arg | Phe | Arg | Val | 695 | 700 | 705 |
| Leu | Gly | Thr | Leu | Ser | Asn | Ser | Arg | Asp | Phe | Leu | Arg | His | Phe | Gly | 710 | 715 | 720 |
| Cys | Pro | Val | Gly | Ser | Pro | Met | Asn | Pro | Gly | Gln | Leu | Cys | Glu | Val | 725 | 730 | 735 |

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<223> unknown base

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<211> 352

<212> PRT

<213> Homo Sapien

<400> 612

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| Met | Met | Leu | Leu | Val | Gln | Gly | Ala | Cys | Cys | Ser | Asn | Gln | Trp | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |
| Ala | Ala | Val | Leu | Leu | Ser | Leu | Cys | Cys | Leu | Leu | Pro | Ser | Cys | Leu |
|     |     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |
| Pro | Ala | Gly | Gln | Ser | Val | Asp | Phe | Pro | Trp | Ala | Ala | Val | Asp | Asn |
|     |     |     | 35  |     |     |     |     |     | 40  |     |     |     |     | 45  |
| Met | Met | Val | Arg | Lys | Gly | Asp | Thr | Ala | Val | Leu | Arg | Cys | Tyr | Leu |
|     |     |     | 50  |     |     |     |     |     | 55  |     |     |     |     | 60  |
| Glu | Asp | Gly | Ala | Ser | Lys | Gly | Ala | Trp | Leu | Asn | Arg | Ser | Ser | Ile |
|     |     |     | 65  |     |     |     |     |     | 70  |     |     |     |     | 75  |
| Ile | Phe | Ala | Gly | Gly | Asp | Lys | Trp | Ser | Val | Asp | Pro | Arg | Val | Ser |
|     |     |     | 80  |     |     |     |     |     | 85  |     |     |     |     | 90  |
| Ile | Ser | Thr | Leu | Asn | Lys | Arg | Asp | Tyr | Ser | Leu | Gln | Ile | Gln | Asn |
|     |     |     | 95  |     |     |     |     |     | 100 |     |     |     |     | 105 |
| Val | Asp | Val | Thr | Asp | Asp | Gly | Pro | Tyr | Thr | Cys | Ser | Val | Gln | Thr |

|   |                         |     |
|---|-------------------------|-----|
| 110   | 115                     | 120 |
| Gln His Thr Pro Arg Thr Met Gln Val                         | His Leu Thr Val Gln Val |     |
| 125   | 130                     | 135 |
| Pro Pro Lys Ile Tyr Asp Ile Ser Asn Asp Met Thr Val Asn Glu |                         |     |
| 140   | 145                     | 150 |
| Gly Thr Asn Val Thr Leu Thr Cys Leu Ala Thr Gly Lys Pro Glu |                         |     |
| 155   | 160                     | 165 |
| Pro Ser Ile Ser Trp Arg His Ile Ser Pro Ser Ala Lys Pro Phe |                         |     |
| 170   | 175                     | 180 |
| Glu Asn Gly Gln Tyr Leu Asp Ile Tyr Gly Ile Thr Arg Asp Gln |                         |     |
| 185   | 190                     | 195 |
| Ala Gly Glu Tyr Glu Cys Ser Ala Glu Asn Ala Val Ser Phe Pro |                         |     |
| 200   | 205                     | 210 |
| Asp Val Arg Lys Val Lys Val Val Val Asn Phe Ala Pro Thr Ile |                         |     |
| 215   | 220                     | 225 |
| Gln Glu Ile Lys Ser Gly Thr Val Thr Pro Gly Arg Ser Gly Leu |                         |     |
| 230   | 235                     | 240 |
| Ile Arg Cys Glu Gly Ala Gly Val Pro Pro Pro Ala Phe Glu Trp |                         |     |
| 245   | 250                     | 255 |
| Tyr Lys Gly Glu Lys Lys Leu Phe Asn Gly Gln Gln Gly Ile Ile |                         |     |
| 260   | 265                     | 270 |
| Ile Gln Asn Phe Ser Thr Arg Ser Ile Leu Thr Val Thr Asn Val |                         |     |
| 275   | 280                     | 285 |
| Thr Gln Glu His Phe Gly Asn Tyr Thr Cys Val Ala Ala Asn Lys |                         |     |
| 290   | 295                     | 300 |
| Leu Gly Thr Thr Asn Ala Ser Leu Pro Leu Asn Pro Pro Ser Thr |                         |     |
| 305   | 310                     | 315 |
| Ala Gln Tyr Gly Ile Thr Gly Ser Ala Asp Val Leu Phe Ser Cys |                         |     |
| 320   | 325                     | 330 |
| Trp Tyr Leu Val Leu Thr Leu Ser Ser Phe Thr Ser Ile Phe Tyr |                         |     |
| 335   | 340                     | 345 |
| Leu Lys Asn Ala Ile Leu Gln                                 |                         |     |
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<211> 1797

<212> DNA

<213> Homo Sapien

<400> 613

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<210> 614

<211> 520

<212> PRT

<213> Homo Sapien

<400> 614

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Arg | Asn | Lys | Lys | Ile | Leu | Lys | Glu | Asp | Glu | Leu | Leu | Ser | Glu | 1   | 5   | 10  | 15 |
| Thr | Gln | Gln | Ala | Ala | Phe | His | Gln | Ile | Ala | Met | Glu | Pro | Phe | Glu | 20  | 25  | 30  |    |
| Ile | Asn | Val | Pro | Lys | Pro | Lys | Arg | Arg | Asn | Gly | Val | Asn | Phe | Ser | 35  | 40  | 45  |    |
| Leu | Ala | Val | Val | Val | Ile | Tyr | Leu | Ile | Leu | Leu | Thr | Ala | Gly | Ala | 50  | 55  | 60  |    |
| Gly | Leu | Leu | Val | Val | Gln | Val | Leu | Asn | Leu | Gln | Ala | Arg | Leu | Arg | 65  | 70  | 75  |    |
| Val | Leu | Glu | Met | Tyr | Phe | Leu | Asn | Asp | Thr | Leu | Ala | Ala | Glu | Asp | 80  | 85  | 90  |    |
| Ser | Pro | Ser | Phe | Ser | Leu | Leu | Gln | Ser | Ala | His | Pro | Gly | Glu | His | 95  | 100 | 105 |    |
| Leu | Ala | Gln | Gly | Ala | Ser | Arg | Leu | Gln | Val | Leu | Gln | Ala | Gln | Leu | 110 | 115 | 120 |    |
| Thr | Trp | Val | Arg | Val | Ser | His | Glu | His | Leu | Leu | Gln | Arg | Val | Asp | 125 | 130 | 135 |    |
| Asn | Phe | Thr | Gln | Asn | Pro | Gly | Met | Phe | Arg | Ile | Lys | Gly | Glu | Gln | 140 | 145 | 150 |    |
| Gly | Ala | Pro | Gly | Leu | Gln | Gly | His | Lys | Gly | Ala | Met | Gly | Met | Pro | 155 | 160 | 165 |    |
| Gly | Ala | Pro | Gly | Pro | Pro | Gly | Pro | Pro | Ala | Glu | Lys | Gly | Ala | Lys | 170 | 175 | 180 |    |
| Gly | Ala | Met | Gly | Arg | Asp | Gly | Ala | Thr | Gly | Pro | Ser | Gly | Pro | Gln |     |     |     |    |

| 185 |     |     |     |     |     |     |     |     |     | 190 |     |     |     | 195 |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|
| Gly | Pro | Pro | Gly | Val | Lys | Gly | Glu | Ala | Gly | Leu | Gln | Gly | Pro | Gln |  |  |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |  |  |
| Gly | Ala | Pro | Gly | Lys | Gln | Gly | Ala | Thr | Gly | Thr | Pro | Gly | Pro | Gln |  |  |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |  |  |
| Gly | Glu | Lys | Gly | Ser | Lys | Gly | Asp | Gly | Gly | Leu | Ile | Gly | Pro | Lys |  |  |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |  |  |
| Gly | Glu | Thr | Gly | Thr | Lys | Gly | Glu | Lys | Gly | Asp | Leu | Gly | Leu | Pro |  |  |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |  |  |
| Gly | Ser | Lys | Gly | Asp | Arg | Gly | Met | Lys | Gly | Asp | Ala | Gly | Val | Met |  |  |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |  |  |
| Gly | Pro | Pro | Gly | Ala | Gln | Gly | Ser | Lys | Gly | Asp | Phe | Gly | Arg | Pro |  |  |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |  |  |
| Gly | Pro | Pro | Gly | Leu | Ala | Gly | Phe | Pro | Gly | Ala | Lys | Gly | Asp | Gln |  |  |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |  |  |
| Gly | Gln | Pro | Gly | Leu | Gln | Gly | Val | Pro | Gly | Pro | Pro | Gly | Ala | Val |  |  |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |  |  |  |
| Gly | His | Pro | Gly | Ala | Lys | Gly | Glu | Pro | Gly | Ser | Ala | Gly | Ser | Pro |  |  |  |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |  |  |  |
| Gly | Arg | Ala | Gly | Leu | Pro | Gly | Ser | Pro | Gly | Ser | Pro | Gly | Ala | Thr |  |  |  |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |  |  |  |
| Gly | Leu | Lys | Gly | Ser | Lys | Gly | Asp | Thr | Gly | Leu | Gln | Gly | Gln | Gln |  |  |  |
|     |     |     |     | 350 |     |     |     |     | 355 |     |     |     |     | 360 |  |  |  |
| Gly | Arg | Lys | Gly | Glu | Ser | Gly | Val | Pro | Gly | Pro | Ala | Gly | Val | Lys |  |  |  |
|     |     |     |     | 365 |     |     |     |     | 370 |     |     |     |     | 375 |  |  |  |
| Gly | Glu | Gln | Gly | Ser | Pro | Gly | Leu | Ala | Gly | Pro | Lys | Gly | Ala | Pro |  |  |  |
|     |     |     |     | 380 |     |     |     |     | 385 |     |     |     |     | 390 |  |  |  |
| Gly | Gln | Ala | Gly | Gln | Lys | Gly | Asp | Gln | Gly | Val | Lys | Gly | Ser | Ser |  |  |  |
|     |     |     |     | 395 |     |     |     |     | 400 |     |     |     |     | 405 |  |  |  |
| Gly | Glu | Gln | Gly | Val | Lys | Gly | Glu | Lys | Gly | Glu | Arg | Gly | Glu | Asn |  |  |  |
|     |     |     |     | 410 |     |     |     |     | 415 |     |     |     |     | 420 |  |  |  |
| Ser | Val | Ser | Val | Arg | Ile | Val | Gly | Ser | Ser | Asn | Arg | Gly | Arg | Ala |  |  |  |
|     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |     | 435 |  |  |  |
| Glu | Val | Tyr | Tyr | Ser | Gly | Thr | Trp | Gly | Thr | Ile | Cys | Asp | Asp | Glu |  |  |  |
|     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     | 450 |  |  |  |
| Trp | Gln | Asn | Ser | Asp | Ala | Ile | Val | Phe | Cys | Arg | Met | Leu | Gly | Tyr |  |  |  |
|     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     | 465 |  |  |  |
| Ser | Lys | Gly | Arg | Ala | Leu | Tyr | Lys | Val | Gly | Ala | Gly | Thr | Gly | Gln |  |  |  |

|   |     |  |     |  |     |
|---|-----|--|-----|--|-----|
|   | 470 |  | 475 |  | 480 |
| Ile Trp Leu Asp Asn Val Gln Cys Arg Gly Thr Glu Ser Thr Leu |     |  |     |  |     |
|   | 485 |  | 490 |  | 495 |
| Trp Ser Cys Thr Lys Asn Ser Trp Gly His His Asp Cys Ser His |     |  |     |  |     |
|   | 500 |  | 505 |  | 510 |
| Glu Glu Asp Ala Gly Val Glu Cys Ser Val                     |     |  |     |  |     |
|   | 515 |  | 520 |  |     |

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 <212> DNA  
 <213> Homo Sapien

<400> 615  
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 atttaagaag catcctctgc caagaccaa aggaaagaag aaaaagggcc 150  
 aaaagccaaa atgaaactga tggacttgt tttcaccatt gggctaactt 200  
 tgctgctagg agttcaagcc atgcctgcaa atgcctctc ttgctacaga 250  
 aagatactaa aagatcacia ctgtcacaac cttccggaag gagtagctga 300  
 cctgacacag attgatgtca atgtccagga tcatttcttg gatgggaagg 350  
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 aaagacgttt tctttggacc aaagatctct ttcgtgattc cttgcaacaa 450  
 tcaatgagaa tcttcatgta ttctggagaa caccattcct gatttccac 500  
 aaactgcact acatcagtat aactgcattt ctagtttcta tatagtgcaa 550  
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 gttaaacaag tagtaataaa agttaattca atctaataaa aaaaaaa 647

<210> 616  
 <211> 98  
 <212> PRT  
 <213> Homo Sapien

<400> 616  
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 20 25 30  
 Lys Ile Leu Lys Asp His Asn Cys His Asn Leu Pro Glu Gly Val  
 35 40 45

Ala Asp Leu Thr Gln Ile Asp Val Asn Val Gln Asp His Phe Trp  
50 55 60

Asp Gly Lys Gly Cys Glu Met Ile Cys Tyr Cys Asn Phe Ser Glu  
65 70 75

Leu Leu Cys Cys Pro Lys Asp Val Phe Phe Gly Pro Lys Ile Ser  
80 85 90

Phe Val Ile Pro Cys Asn Asn Gln  
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<210> 617

<211> 2558

<212> DNA

<213> Homo Sapien

<400> 617

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accccgccgt ggtgggttga gggcgcgcag tagagcagca gcacaggcgc 150  
gggtcccggg aggccggctc tgctcgcgcc gagatgtgga atctccttca 200  
cgaaaccgac tcggctgtgg ccaccgcgcg ccgcccgcgc tggctgtgcg 250  
ctggggcgct ggtgctggcg ggtggcttct ttctcctcgg ctctcctctc 300  
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 atatataa 2558

<210> 618  
 <211> 750  
 <212> PRT  
 <213> Homo Sapien

<400> 618  
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                   20                  25                  30  
 Gly Phe Phe Leu Leu Gly Phe Leu Phe Gly Trp Phe Ile Lys Ser  
                   35                  40                  45  
 Ser Asn Glu Ala Thr Asn Ile Thr Pro Lys His Asn Met Lys Ala  
                   50                  55                  60  
 Phe Leu Asp Glu Leu Lys Ala Glu Asn Ile Lys Lys Phe Leu His  
                   65                  70                  75  
 Asn Phe Thr Gln Ile Pro His Leu Ala Gly Thr Glu Gln Asn Phe  
                   80                  85                  90  
 Gln Leu Ala Lys Gln Ile Gln Ser Gln Trp Lys Glu Phe Gly Leu  
                   95                  100                  105  
 Asp Ser Val Glu Leu Ala His Tyr Asp Val Leu Leu Ser Tyr Pro  
                   110                  115                  120  
 Asn Lys Thr His Pro Asn Tyr Ile Ser Ile Ile Asn Glu Asp Gly  
                   125                  130                  135  
 Asn Glu Ile Phe Asn Thr Ser Leu Phe Glu Pro Pro Pro Pro Gly  
                   140                  145                  150  
 Tyr Glu Asn Val Ser Asp Ile Val Pro Pro Phe Ser Ala Phe Ser  
                   155                  160                  165  
 Pro Gln Gly Met Pro Glu Gly Asp Leu Val Tyr Val Asn Tyr Ala  
                   170                  175                  180  
 Arg Thr Glu Asp Phe Phe Lys Leu Glu Arg Asp Met Lys Ile Asn  
                   185                  190                  195  
 Cys Ser Gly Lys Ile Val Ile Ala Arg Tyr Gly Lys Val Phe Arg  
                   200                  205                  210

|                 |   |     |     |     |
|-----------------|---|-----|-----|-----|
| Gly Asn Lys Val | Lys Asn Ala Gln Leu Ala Gly Ala Lys Gly Val | 215 | 220 | 225 |
| Ile Leu Tyr Ser | Asp Pro Ala Asp Tyr Phe Ala Pro Gly Val Lys | 230 | 235 | 240 |
| Ser Tyr Pro Asp | Gly Trp Asn Leu Pro Gly Gly Gly Val Gln Arg | 245 | 250 | 255 |
| Gly Asn Ile Leu | Asn Leu Asn Gly Ala Gly Asp Pro Leu Thr Pro | 260 | 265 | 270 |
| Gly Tyr Pro Ala | Asn Glu Tyr Ala Tyr Arg Arg Gly Ile Ala Glu | 275 | 280 | 285 |
| Ala Val Gly Leu | Pro Ser Ile Pro Val His Pro Ile Gly Tyr Tyr | 290 | 295 | 300 |
| Asp Ala Gln Lys | Leu Leu Glu Lys Met Gly Gly Ser Ala Pro Pro | 305 | 310 | 315 |
| Asp Ser Ser Trp | Arg Gly Ser Leu Lys Val Pro Tyr Asn Val Gly | 320 | 325 | 330 |
| Pro Gly Phe Thr | Gly Asn Phe Ser Thr Gln Lys Val Lys Met His | 335 | 340 | 345 |
| Ile His Ser Thr | Asn Glu Val Thr Arg Ile Tyr Asn Val Ile Gly | 350 | 355 | 360 |
| Thr Leu Arg Gly | Ala Val Glu Pro Asp Arg Tyr Val Ile Leu Gly | 365 | 370 | 375 |
| Gly His Arg Asp | Ser Trp Val Phe Gly Gly Ile Asp Pro Gln Ser | 380 | 385 | 390 |
| Gly Ala Ala Val | Val His Glu Ile Val Arg Ser Phe Gly Thr Leu | 395 | 400 | 405 |
| Lys Lys Glu Gly | Trp Arg Pro Arg Arg Thr Ile Leu Phe Ala Ser | 410 | 415 | 420 |
| Trp Asp Ala Glu | Glu Phe Gly Leu Leu Gly Ser Thr Glu Trp Ala | 425 | 430 | 435 |
| Glu Glu Asn Ser | Arg Leu Leu Gln Glu Arg Gly Val Ala Tyr Ile | 440 | 445 | 450 |
| Asn Ala Asp Ser | Ser Ile Glu Gly Asn Tyr Thr Leu Arg Val Asp | 455 | 460 | 465 |
| Cys Thr Pro Leu | Met Tyr Ser Leu Val His Asn Leu Thr Lys Glu | 470 | 475 | 480 |
| Leu Lys Ser Pro | Asp Glu Gly Phe Glu Gly Lys Ser Leu Tyr Glu | 485 | 490 | 495 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Trp | Thr | Lys | Lys | Ser | Pro | Ser | Pro | Glu | Phe | Ser | Gly | Met | Pro | 500 | 505 | 510 |
| Arg | Ile | Ser | Lys | Leu | Gly | Ser | Gly | Asn | Asp | Phe | Glu | Val | Phe | Phe | 515 | 520 | 525 |
| Gln | Arg | Leu | Gly | Ile | Ala | Ser | Gly | Arg | Ala | Arg | Tyr | Thr | Lys | Asn | 530 | 535 | 540 |
| Trp | Glu | Thr | Asn | Lys | Phe | Ser | Gly | Tyr | Pro | Leu | Tyr | His | Ser | Val | 545 | 550 | 555 |
| Tyr | Glu | Thr | Tyr | Glu | Leu | Val | Glu | Lys | Phe | Tyr | Asp | Pro | Met | Phe | 560 | 565 | 570 |
| Lys | Tyr | His | Leu | Thr | Val | Ala | Gln | Val | Arg | Gly | Gly | Met | Val | Phe | 575 | 580 | 585 |
| Glu | Leu | Ala | Asn | Ser | Ile | Val | Leu | Pro | Phe | Asp | Cys | Arg | Asp | Tyr | 590 | 595 | 600 |
| Ala | Val | Val | Leu | Arg | Lys | Tyr | Ala | Asp | Lys | Ile | Tyr | Ser | Ile | Ser | 605 | 610 | 615 |
| Met | Lys | His | Pro | Gln | Glu | Met | Lys | Thr | Tyr | Ser | Val | Ser | Phe | Asp | 620 | 625 | 630 |
| Ser | Leu | Phe | Ser | Ala | Val | Lys | Asn | Phe | Thr | Glu | Ile | Ala | Ser | Lys | 635 | 640 | 645 |
| Phe | Ser | Glu | Arg | Leu | Gln | Asp | Phe | Asp | Lys | Ser | Asn | Pro | Ile | Val | 650 | 655 | 660 |
| Leu | Arg | Met | Met | Asn | Asp | Gln | Leu | Met | Phe | Leu | Glu | Arg | Ala | Phe | 665 | 670 | 675 |
| Ile | Asp | Pro | Leu | Gly | Leu | Pro | Asp | Arg | Pro | Phe | Tyr | Arg | His | Val | 680 | 685 | 690 |
| Ile | Tyr | Ala | Pro | Ser | Ser | His | Asn | Lys | Tyr | Ala | Gly | Glu | Ser | Phe | 695 | 700 | 705 |
| Pro | Gly | Ile | Tyr | Asp | Ala | Leu | Phe | Asp | Ile | Glu | Ser | Lys | Val | Asp | 710 | 715 | 720 |
| Pro | Ser | Lys | Ala | Trp | Gly | Glu | Val | Lys | Arg | Gln | Ile | Tyr | Val | Ala | 725 | 730 | 735 |
| Ala | Phe | Thr | Val | Gln | Ala | Ala | Ala | Glu | Thr | Leu | Ser | Glu | Val | Ala | 740 | 745 | 750 |

<210> 619

<211> 24

<212> DNA

<213> Artificial Sequence

<220>



<223> Synthetic oligonucleotide probe  
<400> 619  
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<210> 620  
<211> 25  
<212> DNA  
<213> Artificial Sequence  
<220>  
<223> Synthetic oligonucleotide probe  
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tgggaaatca ggaatggtgt tctcc 25  
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